



# Marquette University

## Undergraduate

### 2011-2012 Bulletin

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# About Marquette University

## From the President

At Marquette University, the entire university community is dedicated to the academic success and personal growth of our students. The university's commitment to academic excellence is complemented by a grounding in the centuries-old Jesuit concept, *cura personalis*, which calls us to appreciate and respect the individual hopes, desires, aspirations and concerns of all members of the Marquette community.

In this spirit, this bulletin has been created to guide you in planning your academic career and professional development. With its descriptions of academic majors and required courses, study abroad opportunities, services for students and policies, it is here to help you choose the path at Marquette that best suits you, fosters your growth and prepares you for the challenges, rewards, leadership and service that await you when you complete your work here. Use it in the spirit of Father Jacques Marquette, the 17th century Jesuit explorer for whom our university is named. Let his embrace of the unfamiliar, his openness to new opportunities and his strong sense of purpose inspire you as you explore the offerings of this outstanding university.

Rev. Scott R. Pilarz, S.J.  
President

## From the Provost

This bulletin describes all the practical details of Marquette University programs that you need to know—from the range of majors and courses offered, to the requirements for graduation, to the opportunities for professional development outside of class, to academic policies and procedures. But we also hope that, in reading the bulletin, you begin to understand what makes Marquette such a special place.

Faculty at Marquette take pride in being both teachers and scholars. They believe that those roles are complementary, and that both are essential to your development as an ethical, educated person. You will discover that faculty you consider excellent teachers are often well-regarded researchers and experts in their disciplines. Their commitment to you follows from Marquette's Ignatian values and vision. Our faculty believe that education is a mode of personal formation, conducted with a respect for the whole person, striving for ethical as well as intellectual excellence and calling for service to others.

A Marquette education asks you to engage the world's most difficult problems, to develop organizational skills that will help you work effectively in the company of others and to maintain a steady focus on issues of ethics and social responsibility. This is a style of education that has helped generations of Marquette alumni achieve positions of distinction and leadership in virtually every field of endeavor, from law, engineering, business, medicine, education and dentistry, to the sciences, humanities, social sciences and media and performing arts. A Marquette education offers you the opportunity to be the difference in the world, and that is the gift that Marquette's faculty, students and staff hope to share with you.

John J. Pauly, Ph.D.  
Provost

## History

Marquette University was founded in 1881 by members of the Society of Jesus, a Catholic religious order established in 1540 by St. Ignatius Loyola. The university is named after Father Jacques Marquette (1637-1675), a French, Jesuit missionary and explorer in North America.

The origins of Marquette University date from 1848 when the Most Rev. John Martin Henni, first bishop of Milwaukee, obtained \$16,000 from Guillaume DeBoey, a Belgian, Catholic businessman, to



establish a Jesuit college. Bishop Henni petitioned the Jesuits to open a school, Marquette College, in Milwaukee. Because the Jesuits lacked personnel to undertake the project for decades, Marquette College did not open until 1881.

Marquette remained a small liberal arts college for men at North 10th and West State streets until 1907. That year its leaders obtained a university charter from the state of Wisconsin and moved operations to a building just east of the Church of the Gesu, at North 12th Street and West Wisconsin Avenue. That building, Johnston Hall, is the oldest building on the Marquette campus.

Between 1907 and 1913, Marquette expanded to include divisions of medicine, dentistry, nursing, pharmacy, law, business, engineering, music and journalism. In 1909, Marquette became the first Catholic university in the world to offer coeducation as part of its regular undergraduate program.

Following World War II, enrollment at Marquette increased dramatically, as at other American colleges and universities. Demand for graduate and professional education grew. In 1957-58, Marquette became for a short time the largest Catholic university in the nation.

In the 1960s and '70s, Marquette introduced doctoral programs in various fields, including religious studies, biology, history and chemistry.

Since 1990, Marquette has added numerous programs, including degree programs for working adults, which offer courses on campus as well as at satellite locations in southeastern Wisconsin; a part-time law program; an executive master of business administration program; programs in physician assistant studies and exercise science; and a Graduate School of Management.

Today Marquette University has a campus of approximately 90 acres and 60 buildings located near downtown Milwaukee. It consists of 12 colleges and schools:

- Arts and Sciences
- Business Administration
- Communication
- Dentistry
- Education
- Engineering
- Graduate
- Health Sciences
- Law
- Management (Graduate)
- Nursing
- Professional Studies

## **Mission Statement**

Marquette University is a Catholic, Jesuit university dedicated to serving God by serving our students and contributing to the advancement of knowledge. Our mission, therefore, is the search for truth, the discovery and sharing of knowledge, the fostering of personal and professional excellence, the promotion of a life of faith, and the development of leadership expressed in service to others.

## **Excellence**

Our students, whether traditional or non-traditional, undergraduate, graduate or professional, come to Marquette University to share our commitment to the pursuit of excellence in all things as a lifelong endeavor. They come to join a community whose members — faculty, staff, students, trustees, alumni and friends alike — believe that education must encompass the whole person: spiritual and moral as well as intellectual, the heart as well as the mind. And they come seeking the educational, professional and cultural advantages of a university located in the heart of the city. We, in turn, take seriously our responsibility to foster and support excellence in teaching and research, to keep a Marquette education accessible to a diverse population of students, and to offer personal attention and care to each member of the Marquette community.

## **Faith**

As a Catholic university, we are committed to the unfettered pursuit of truth under the mutually illuminating powers of human intelligence and Christian faith. Our Catholic identity is expressed in our choices of curricula, our sponsorship of programs and activities devoted to the cultivation of our religious character, our ecumenical outlook, and our support of Catholic beliefs and values. Precisely because Catholicism at its best seeks to be inclusive, we are open to all who share our mission and seek the truth about God and the world, and we are firmly committed to academic freedom as the necessary precondition for that search. We welcome and benefit enormously from the diversity of seekers within our ranks, even as we freely choose and celebrate our own Catholic identity.

## **Leadership**

As a Jesuit university, Marquette embodies the intellectual and religious traditions of the Society of Jesus. Through an academically rigorous, values-centered curriculum, our students receive a firm grounding in the liberal arts, preparation for work in a world of increasing complexity and diversity, and formation for life as ethical and informed leaders in their religious, cultural, professional and civic communities. They work with and learn from faculty who are true teacher-scholars, whose research not only advances the sum of human knowledge, but also informs their teaching, and whose commitment to students is fundamental to their intellectual and professional lives.

## **Service**

Through both our academic and co-curricular programs, Marquette strives to develop men and women who will dedicate their lives to the service of others, actively entering into the struggle for a more just society. We expect all members of the Marquette community, whatever their faith traditions, to give concrete expression to their beliefs by giving of themselves in service to those in need.

All this we pursue for the greater glory of God and the common benefit of the human community.

## **Vision Statement**

Our vision is to provide a Catholic, Jesuit education that is genuinely transformational, so that our students graduate not simply better educated but better people, and to do so with such excellence that when asked to name the three or four best Catholic universities in America, people will include Marquette as a matter of course.

## **Statement on Human Dignity and Diversity**

As a Catholic, Jesuit university, Marquette recognizes and cherishes the dignity of each individual regardless of age, culture, faith, ethnicity, race, gender, sexual orientation, language, disability or social

class. Precisely because Catholicism at its best seeks to be inclusive, we are open to all who share our mission and seek the truth about God and the world. Through our admissions and employment policies and practices, our curricular and co-curricular offerings, and our welcoming and caring campus environment, Marquette seeks to become a more diverse and inclusive academic community dedicated to the promotion of justice.

Our commitment to a diverse university community helps us to achieve excellence by promoting a culture of learning, appreciation and understanding. Each member of the Marquette community is charged to treat everyone with care and respect, and to value and treasure our differences. This call to action is integral to the tradition that we share.

## Accreditation

An educational institution is only as strong as the level of excellence that it demands of itself as well as of its faculty and students. Marquette University is accredited by the Higher Learning Commission, a commission of the North Central Association of Colleges and Schools. Marquette University has set consistently high standards for itself that have resulted in accreditation and/or certification of its academic programs from these additional organizations and associations.

ABET Engineering Accreditation Commission, Accreditation Review Commission on Education for the Physician Assistant, Accrediting Council on Education in Journalism and Mass Communication, American Association of Law Schools, American Bar Association, American Chemical Society, American College of Nurse-Midwives Division of Accreditation, American Psychological Association, American Society of Exercise Physiology (ASEP), Commission on Accreditation of Athletic Training Education, Commission on Accreditation in Physical Therapy Education, AACSB – International, The Association for Advancement of Collegiate Schools of Business, Commission on Collegiate Nursing Education, Commission on Dental Accreditation – American Dental Association, Council on Academic Accreditation of The American Speech-Language-Hearing Association, National Accrediting Agency for Clinical Laboratory Sciences, National Association of Schools of Theatre, National Council for Accreditation of Teacher Education, National Strength and Conditioning Association, Wisconsin Department of Public Instruction, Wisconsin State Board of Nursing.

These accreditations assure a student that Marquette is recognized and approved by select national and regional educational associations, societies and councils. In addition, a student has the security of knowing that credits earned at Marquette have transfer value to comparable institutions of learning, just as an incoming transfer student learns by checking this list that Marquette can be expected to honor most credits earned at a similarly accredited college or university.

## Legal Disclosure

Marquette University does not discriminate in any manner contrary to law or justice on the basis of race, color, gender, age, sexual orientation, religion, disability, veteran's status or national origin in its educational programs or activities, including employment and admissions. At the same time, Marquette cherishes its right and duty to seek and retain personnel who will make a positive contribution to its religious character, goals, and mission in order to enhance the Jesuit, Catholic tradition. Federal laws (Titles VI, VII and IX; the Age Discrimination Act in Employment of 1967 as amended, the Rehabilitation Act of 1973 as amended, the Veteran's Readjustment Assistance Act of 1974, and the Americans With Disabilities Act of 1990) prohibit such discrimination.

Employee inquiries concerning the application of Section 503 of the Rehabilitation Act of 1973, Section 402 of the Vietnam Era Veteran's Readjustment Assistance Act of 1974 and Title I of the Americans with Disabilities Act of 1990 may be referred to the Office of Human Resources; Straz Tower; P.O. Box 1881; Milwaukee, WI 53201-1881; (414) 288-7305.

Student inquiries concerning Section 504 of the Rehabilitation Act of 1973 and Title III of the Americans with Disabilities Act of 1990 may be referred to the Office of Student Educational Services; Alumni Memorial Union; P.O. Box 1881; Milwaukee, WI 53201-1881; (414) 288-1645, V/T.

Student and employee inquiries concerning the application of Titles VI, VII, IX the Age Discrimination Acts of 1967 as amended, as well as Executive Order 11246 as amended may be referred to the Affirmative Action Officer; Straz Tower; P.O. Box 1881; Milwaukee, WI 53201-1881; (414) 288-3430.

The Marquette University Board of Trustees approved the Affirmative Action Program, formalizing the university's position toward human rights. This program reaffirms and specifies action programs to continue the pledge of promotion and equal opportunity for all qualified persons.



## Undergraduate Bulletin

### From the Vice Provost for Undergraduate Programs and Teaching

Welcome to the undergraduate section of the Marquette University Bulletin that describes programs offered in eight colleges across the university.

Many of these programs are nationally recognized, and all are grounded in long-standing traditions of Jesuit education. Each undergraduate's academic experience begins with the University Core of Common Studies, which comprises course work in nine key areas of knowledge: 1) Rhetoric, 2) Mathematical Reasoning, 3) Individual and Social Behavior, 4) Diverse Cultures, 5) Literature/Performing Arts, 6) Histories of Cultures and Societies, 7) Science and Nature, 8) Human Nature and Ethics and 9) Theology. In these core courses, the distinctive "Marquette experience" begins to take shape, as students develop an approach to human understanding grounded in the liberal arts.

Within each college, students complete foundation courses crucial to their disciplines, and then immerse themselves in the more specialized courses required for their majors and minors. The bulletin describes the individual courses available to you and offers examples of semester-by-semester course schedules to help guide your choices.

At Marquette University we emphasize the need to integrate theory and practice, and reflection and action, so we offer many opportunities for you to learn through experiences outside the classroom. Co-curricular opportunities abound and include study abroad, undergraduate research, living-learning communities in the residence halls and internships. Each semester hundreds of Marquette students participate in service-learning courses that involve significant engagement with the local community. Two extraordinary examples of our co-curricular opportunities are the Les Aspin Center in Washington, D.C., where students work in Congressional offices or government agencies while taking course work on politics, and the service learning program in Cape Town, South Africa, where students work with community organizations on social justice issues.

As you will see, each college or school offers wonderful and unique programs, courses, student organizations and clubs and activities. What they all share is a commitment to making your Marquette education a life-transforming experience. The faculty and staff listed in this bulletin will be happy to explain how a Marquette education helps our students "Be the Difference" in the world. I hope you enjoy your visit to the Marquette site!

Sincerely,

Gary Meyer, Ph.D.  
Vice Provost for Undergraduate Programs and Teaching

### How to Use This Bulletin

This 2011-2012 Marquette University Undergraduate Bulletin governs curricular requirements for all undergraduate students entering Marquette University during the 2011-12 academic year. The curricular requirements for all active academic programs are outlined herein, and are applicable to new freshmen, new transfer students (advanced standing), readmitted students who have stopped out for more than one year and second bachelor degree students. Academic policy and course changes will apply to all students as of the date they become effective, regardless of whether they were in effect at the time the student initially enrolled at Marquette. Each entering student can view degree requirements of the programs in this bulletin or in Academic Advisement, Marquette's degree audit system, which is built upon the bulletin in effect at the time of admission or readmission. Students are encouraged to consult with Academic Advisement throughout their tenure at Marquette. This bulletin will also

be archived at the end of the academic year and will continue to be available online. The university reserves the right to amend any of its academic programs, requirements for degrees, tuitions, fees, etc., at any time, in its sole discretion.

# Admission and Readmission to the Undergraduate Colleges

## Application for Undergraduate Admission

Prospective students apply online: Office of Undergraduate Admissions (<http://www.marquette.edu/explore>).

Admission to Marquette University may be granted by the Committee on Admissions to an applicant whose qualifications indicate a potential for successful college work. During the application process, the educational background of the applicant is carefully reviewed, and each applicant is given personal attention and consideration. However, no application will be considered for any applicant with an outstanding balance of \$3,000 or more already owed the university.

Undergraduate applicants are considered for admission to Marquette University in one of the following classifications:

- **Admission as a Freshman:** For applicants entering college for the first time.
- **Admission as a Transfer Student (Advanced Standing):** For applicants who have been enrolled or registered in an institution of higher learning since high school graduation.
- **Admission as a Non-degree Student:** For applicants who wish to receive credit for courses but who are not (yet) seeking degree status.

All transcripts required in the admission process must be official. Official transcripts are those sent directly from the institution to the appropriate university office and not delivered by the student. Transcripts mailed and/or delivered directly by the student will not be accepted.

The address for institutions to send official transcripts is:

Office of Undergraduate Admissions

Marquette University

P.O. Box 1881

Milwaukee, WI 53201-1881

If Marquette University has reason to suspect an applicant's high school diploma, transcript or other information is fraudulent or not valid, the Dean or his/her designate will investigate the matter. The Office of Admissions reserves the right to rescind admission in cases where fraudulence is found.

Applicants with questions not answered in this section are encouraged to visit Office of Undergraduate Admissions (<http://www.marquette.edu/explore>) or call at (800) 222-6544 or (414) 288-7302.

## Admission as a Freshman

All records and other materials required for admission are described in this section. Admission decisions are made on a competitive, pooled basis.

Freshman applications and supporting credentials must be postmarked no later than Dec. 1. With the exception of physical therapy and athletic training, applications will continue to be accepted and reviewed on a space-available basis after the Dec. 1 deadline. If colleges of the university have special admission procedures and requirements, they are listed in the respective sections of this bulletin.

For success in all of its programs, Marquette University recommends a balanced high school preparation with course work in the following areas: English, mathematics, natural science, social studies, and foreign language. The chart below lists the minimum recommended preparation.



## Recommended High School Preparation

| Subject                      | Arts and Sciences | Business Administrative | Communications | Engineering | Nursing   | Health Sciences |
|------------------------------|-------------------|-------------------------|----------------|-------------|-----------|-----------------|
| English                      | 4                 | 4                       | 4              | 4           | 4         | 4               |
| Social Studies               | 3                 | 2                       | 2              | 2           | 2         | 2               |
| Foreign Language             | 2                 | 2††                     | 2              |             |           |                 |
| Mathematics                  | 3#                | 3#                      | 2              | 4           | 3##       | 3#              |
| Science (any)                | 2†                | 2                       | 1              | 1           |           |                 |
| Biology                      |                   |                         |                | 1           | 1*        | 1               |
| Chemistry                    |                   |                         |                | 1           | 1*        | 1               |
| Physics                      |                   |                         |                | 1           |           |                 |
| Additional Academic Subjects | 2                 | 3                       | 5              | 2           | 5         | 5               |
| <b>TOTAL Academic Units</b>  | <b>16</b>         | <b>16</b>               | <b>16</b>      | <b>16</b>   | <b>16</b> | <b>16</b>       |

\* Academic units specifically required for admission.

# Algebra, geometry, intermediate algebra required. Four units of mathematics recommended.

## Algebra and geometry required. Three units of mathematics recommended.

† Pre-medical/dental and science majors should complete three units of science (preferably biology, chemistry, physics; where physics is unavailable, another senior-level science or math course should be substituted).

†† Students interested in international business are strongly urged to complete four units of a single foreign language.

## High School Diploma

Graduation from an accredited high school or the equivalent is required. Admission is determined by the high school transcript submitted at the time of application, normally after six or seven semesters of high school. After admission, the student must submit a final high school transcript before the first semester of attendance that indicates the date the high school diploma was earned. If the high school diploma is not earned, the high school equivalency is determined and verified by the Dean of Admissions upon review of the applicant's documents.

## Entrance Examinations

All applicants for admission as freshmen are required to take the Scholastic Aptitude Test (SAT) of the College Entrance Examination Board or the examination of the American College Testing Program (ACT). Students taking the ACT must also submit scores for the optional writing section of the exam. Information concerning these examinations can be obtained from high school counselors or by requesting information from the respective organizations: The College Board (<http://www.collegeboard.com>) or ACT (<http://www.act.org>).

## Application Fee and Tuition Deposit

Each application for admission must be accompanied by a non-refundable application fee of \$30. An applicant who is admitted may reserve a place in the incoming freshman class by forwarding a \$200 tuition deposit (and a \$200 housing deposit if university housing is desired) by the deadline date specified in his or her admission notification. The tuition deposit will be applied to the tuition assessment of the first term. The tuition and housing deposits are non-refundable.

## Admission as a Transfer Student (Advanced Standing)

Students from other colleges, universities, or schools of recognized standing who have pursued courses equivalent to those offered at Marquette University may be considered for admission. Transfer applicants are considered on a rolling basis for all programs except nursing. Refer to the admissions website (<http://www.marquette.edu/explore>) for transfer admission deadlines and details.

Applicants submit the application forms, their final official high school transcript and an official transcript from each post-secondary school, college, university or other institution in which he or she was registered. Failure to report attendance at any such institution since high school graduation during the admission process is considered sufficient reason for dismissal.

A transfer applicant who has completed fewer than 12 term hours of college level work (or its equivalent) must also submit official SAT or ACT test scores for a completed application. (See Entrance Examinations above.)

Generally, a transfer applicant must present a satisfactory record from the schools previously attended. Specific programs may require an average above a 2.500 (on the four-point system). Applicants who are seeking to enter some of Marquette's academic programs as juniors or seniors may, at the discretion of the dean or director, have some of their lower-division requirements substituted by courses or credit earned at another institution prior to admission.

The university may accept credit from two- and four-year accredited educational institutions based on an individual evaluation of credits using the following criteria:

- Educational nature of the institution from which the student intends to transfer credit.
- Comparability of the nature, content, and level of credit earned to that offered by Marquette.
- Appropriateness and applicability of the credit earned to the programs offered by the college, in light of the student's goals and the nature of Marquette's education. The university will normally not accept trade school or job training courses, physical education courses or continuing education courses.

The following regulations are observed in the granting of credit for work completed at other institutions:

1. Marquette does not accept grades in the transfer approval process. Only credits transfer to Marquette.
2. Credit is not allowed for courses completed with lower than a C grade.
3. Credit may not be granted for certain courses of a professional, technical, or vocational nature.

4. A maximum of 16 hours of correspondence credits (including USAFI courses) may be accepted, provided that these credits are presented on the official transcript of an accredited institution and they would normally be accepted for degree credit by the sponsoring institution. These credits may not be used to meet major or minor requirements on the upper division level.
5. Credits from community colleges may not exceed one-half the number of semester hours required for graduation from a four-year curriculum and are not normally accepted once a student reaches junior or senior class status.
6. A tentative evaluation of credits is usually made at the time of admission to Marquette University.  
**Note:** This evaluation is subject to cancellation or revision at the close of two terms of full-time attendance, in accordance with the quality of the record made in the interim.
7. In order to earn a degree from Marquette, the following must be earned from Marquette, as Marquette credits:
  - a) A minimum of 60 credits of the total credits needed for the degree (45 minimum for those admitted to the College of Professional Studies).
  - b) The final 30 credits of the degree.
  - c) A minimum of 32 upper-division credits.
  - d) A minimum of 15 credits in the major.
8. In addition, transfer students must meet all graduation requirements of their curricula as stated elsewhere in this bulletin.

**Note:** Refer to individual colleges on transfer credit policy for any additional transfer requirements.

## Placement Exam/Credit

Marquette University recognizes Advanced Placement, College Level Examination Program and the International Baccalaureate curriculum and will award credit and/or placement based on examination scores earned.

### Advanced Placement (AP)

Degree-seeking matriculated students may be granted advanced placement or credit for college level courses taken in high school. Usually such courses are under the auspices of the Advanced Placement Program of The College Board, and tests are taken upon the recommendation of high school teachers. The tests are administered by The College Board only in the high schools.

Marquette University faculty committees review the content of the Advanced Placement Program to determine course equivalents and required scores. Test results, sent by the College Board Advanced Placement Program, are received during the summer prior to enrollment. Students are notified by mail of the decision concerning advanced placement shortly after the university has received the test results.

The following chart lists the advanced placement subjects accepted at Marquette and the amount of credit that may be awarded for each score. AP credit awards are similar to transfer credit in that they are not calculated into the student's cumulative grade point average. Students with AP credit awards are encouraged to consult with respective departments prior to registering for more advanced courses in the freshman year.

Additionally, Pre-medical or Pre-dental students should consult with the health professions adviser before accepting AP credits.

| <b>Subject/Score</b>                         | <b>3</b>                 | <b>4</b>   | <b>5</b>   |
|--|--------------------------|--|--|
| Art History                                  | No Credit                | 3 cr. for FIAR 9290  | 6 cr. for HIST 1201 and 1202                                   |
| Biology                                      | No Credit                | 3 cr. for BIOL 1009  | 6 cr. for BIOL 1001 and 1002                                   |
| Chemistry                                    | 4 cr. for CHEM 1001      | 8 cr. for CHEM 1001 and 1002                                   | 8 cr. for CHEM 1001 and 1002                                   |
| Chinese Language and Literature              | Placement into CHNS 2001 | 3 cr. for CHNS 2002  | 6 cr. for CHNS 2001 and 2002                                   |
| Computer Science A                           | No Credit                | 4 cr. for COSC 1010  | 4 cr. for COSC 1010  |
| Computer Science AB                          | 4 cr. for COSC 1010      | 4 credit for COSC 1010 and 2100                                | 4 credit for COSC 1010 and 2100                                |
| Economics: Macro                             | 3 cr. for ECON 2004      | 3 cr. for ECON 2004  | 3 cr. for ECON 2004  |
| Economics: Micro                             | 3 cr. for ECON 2003      | 3 cr. for ECON 2003  | 3 cr. for ECON 2003  |
| English Language/ Literature and Composition | No Credit                | 3 cr. for ENGL 1001  | 6 cr. for ENGL 1001 and 1002                                   |
| Environmental Science                        | No Credit                | 3 cr. for PHYS 1009  | 3 cr. for PHYS 1009  |
| French Language                              | Placement into FREN 2001 | 4 cr. for FREN 2003  | 3 cr. for FREN 3001  |
| French Literature                            | Placement into FREN 2003 | 3 cr. for FREN 3001  | 6 cr. for FREN 3001 and 3500                                   |
| German Language                              | Placement into GRMN 2001 | 4 cr. for GRMN 2003  | 3 cr. for GRMN 3001  |
| Government and Politics: Comparative         | No Credit                | 3 cr. for POSC 2401  | 3 cr. for POSC 2401  |
| Government and Politics: United States       | No Credit                | 3 cr. for POSC 2201  | 3 cr. for POSC 2201  |
| History: American                            | No Credit                | 3 cr. for HIST 2101 and placement into upper division* courses | 3 cr. for HIST 2101 and placement into upper division* courses |
| History: European                            | No Credit                | 3 cr. for HIST 1002 and placement into upper division* courses | 3 cr. for HIST 1002 and placement into upper division* courses |
| History: World                               | No Credit                | 6 cr. for HIST 9290  | 6 cr. for HIST 9290  |
| Human Geography                              | No Credit                | 3 cr. for ANTH 9290  | 3 cr. for ANTH 9290  |
| Italian Language                             | Placement into ITAL 2001 | 3 cr. for ITAL 2002  | 6 cr. for ITAL 2001 and 2002                                   |
| Japanese Language and Culture                | Placement into JPNS 2001 | 3 cr. for JPNS 2002  | 6 cr. for JPNS 2001 and 2002                                   |

|  |                              |                              |   |
|--|------------------------------|------------------------------|---|
| Latin Language                           | Placement into LATN 2001     | 3 cr. for LATN 2001          | 6 cr. for LATN 2001 and 2002                    |
| Latin - Vergil                           | Placement into LATN 2001     | 3 cr. for LATN 2001          | 6 cr. for LATN 2001 and 2002                    |
| Mathematics: Calculus AB                 | 4 cr. for MATH 1450          | 4 cr. for MATH 1450          | 4 cr. for MATH 1450                             |
| Mathematics: Calculus BC                 | 8 cr. for MATH 1450 and 1451 | 8 cr. for MATH 1450 and 1451 | 8 cr. for MATH 1450 and 1451                    |
| Music Theory                             | No Credit                    | 3 cr. for MUSI 1020          | 3 cr. for MUSI 1020 plus 3 credit for MUSI 9290 |
| Physics B**#                             | No Credit                    | 6 cr. for PHYS 1001 and 1002 | 6 cr. for PHYS 1001 and 1002                    |
| Physics C**# (Mechanics)                 | No Credit                    | 3 cr. for PHYS 1003          | 3 cr. for PHYS 1003                             |
| Physics C**# (Electricity and Magnetism) | No Credit                    | 3 cr. for PHYS 1004          | 3 cr. for PHYS 1004                             |
| Psychology                               | No Credit                    | 3 cr. for PSYC 1001          | 3 cr. for PSYC 1001                             |
| Spanish Language                         | Placement into SPAN 2001     | 4 cr. for SPAN 2003          | 3 cr. for SPAN 3001                             |
| Spanish Literature                       | Placement into SPAN 2003     | 3 cr. for SPAN 3001          | 6 cr. for SPAN 3001 and 3500                    |
| Statistics                               | No Credit                    | 3 cr. for MATH 1700          | 3 cr. for MATH 1700                             |

**Note:** No course awards are granted for scores of 1 or 2. AP code is 1448. Revised May 2011.

### College Level Examination Program (CLEP)

Credit for some college courses may be earned through the College Level Examination Program (CLEP) of The College Board. Recent high school graduates as well as those who have acquired knowledge in ways other than through traditional formal classroom attendance may benefit from these tests. The maximum number of credits that students can earn by CLEP examination is 30. Credit is not granted for any of the five general examinations. It is granted only for those approved subject examinations listed below. Credits are approved by the respective faculty, dean or director. Credit will be designated as earned by CLEP on the student record CLEP credit awards are similar to transfer credit, in that they are not calculated into the student's cumulative grade point average.

General information on CLEP costs and test centers may be obtained from The College Board (<http://www.collegeboard.com/clep>).

| Subject/Required Score | 50                                     | 55 | 60                                  |
|------------------------|--|----|-------------------------------------|
| General Biology        | BIOL 1009 - 3 cr.                      |    | BIOL 1001 - 3 cr. BIOL 1002 - 3 cr. |
| General Chemistry      | CHEM 1001 - 4 cr.<br>CHEM 1002 - 4 cr. |    |                                     |

|   |                   |                   |                   |
|---|-------------------|-------------------|-------------------|
| Analysis and Interpretation of Literature     | ENGL 9292 - 3 cr. |                   |                   |
| American Literature                           | ENGL 9292 - 3 cr. |                   |                   |
| English Literature                            | ENGL 9292 - 3 cr. |                   |                   |
| Western Civilization 1                        |                   |                   | HIST 1001 - 3 cr. |
| Western Civilization 2                        |                   |                   | HIST 1002 - 3 cr. |
| History of the United States 1                |                   | HIST 2101 - 3 cr. |                   |
| History of the United States 2                |                   | HIST 2102 - 3 cr. |                   |
| Information Systems and Computer Applications |                   | COSC 1000 - 3 cr. |                   |
| College Algebra                               |                   | MATH 1100 - 3 cr. |                   |
| Calculus with Elementary Functions            |                   | MATH 1450 - 4 cr. |                   |
| American Government                           | POSC 2201 - 3 cr. |                   |                   |
| Introduction to Psychology 1                  |                   | PSYC 1001 - 3 cr. |                   |
| Introduction to Sociology                     | SOCI 1001 - 3 cr. |                   |                   |
| Principles of Microeconomics                  |                   | ECON 2003 - 3 cr. |                   |
| Principles of Macroeconomics                  |                   | ECON 2004 - 3 cr. |                   |

**Note:** The score reported on CLEP reports is the scaled score, not the percentile. CLEP code is 1448.

Decisions about core credit for transfer courses, Advanced Placement courses, International Baccalaureate, and CLEP are made by college designees in consultation with the director of Core Curriculum.

### **International Baccalaureate (IB)**

Marquette recognizes the rigorous academic preparation provided students who pursue IB courses as part of their high school curriculum. Matriculated students may be granted credit for their Higher Level (HL) IB courses. The International Baccalaureate Diploma Programme is offered at secondary institutions around the world, including 520 schools in the United States. The International Baccalaureate Organization (IBO) certifies IB World Schools, develops the curriculum and examinations and administers the exams.

Marquette University faculty committees review the content of the International Baccalaureate curriculum to determine course equivalents and required scores. Test results, sent by the International Baccalaureate Organization, are received during the summer prior to enrollment. Students should

contact their College advising office to learn which IB credits have been awarded prior to registering for courses in the freshman year.

The following chart lists the Higher Level (HL) IB courses accepted at Marquette and the amount of credit that may be awarded for each score. IB credit awards are similar to transfer credit in that they are not calculated into the student's cumulative grade point average. Students with IB credit awards are encouraged to consult with respective departments prior to registering for courses in the freshman year. Additionally, pre-medical or pre-dental students should consult with the health professions adviser before accepting IB credits.

| Group                     | Subject/Score                  | H4                                | H5                                | H6                                | H7                                |
|---------------------------|--------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| First Language            | English A1                     | ENGL 1001: 3 cr. ENGL 1002: 3 cr. | ENGL 1001: 3 cr. ENGL 1002: 3 cr. | ENGL 1001: 3 cr. ENGL 1002: 3 cr. | ENGL 1001: 3 cr. ENGL 1002: 3 cr. |
| First Language            | All non-English A Languages    | FOLA waiver 3 humanities credits  | FOLA waiver 3 humanities credits  | FOLA waiver 3 humanities credits  | FOLA waiver 3 humanities credits  |
| Second Language           | French B, German B, Spanish B  | Placement into 2001 level         | Placement into 2003 level         | 4 credits for 2003 level          | 3 credits for 3001 level          |
| Second Language           | Greek B, Italian B, Japanese B | Placement into 2001 level         | Placement into 2002 level         | 3 credits for 2002 level          | 3 credits for 2002 level          |
| Second Language           | Other non-English B languages  | No Credit                         | No Credit                         | 3 credits in humanities           | 3 credits in humanities           |
| Individuals and Societies | Business and Management        | MANA 9390: 3 cr.                  | MANA 9390: 3 cr.                  | MANA 9390: 3 cr.                  | MANA 9390: 3 cr.                  |
| Individuals and Societies | History: Africa                | HIST 1401: 3 cr. HIST 9290: 3 cr. | HIST 1401: 3 cr. HIST 9290: 3 cr. | HIST 1401: 3 cr. HIST 9290: 3 cr. | HIST 1401: 3 cr. HIST 9290: 3 cr. |
| Individuals and Societies | History: Americas              | HIST 1101: 3 cr. HIST 1301: 3 cr. | HIST 1101: 3 cr. HIST 1301: 3 cr. | HIST 1101: 3 cr. HIST 1301: 3 cr. | HIST 1101: 3 cr. HIST 1301: 3 cr. |
| Individuals and Societies | History: Asia                  | HIST 1501: 3 cr. HIST 9290: 3 cr. | HIST 1501: 3 cr. HIST 9290: 3 cr. | HIST 1501: 3 cr. HIST 9290: 3 cr. | HIST 1501: 3 cr. HIST 9290: 3 cr. |
| Individuals and Societies | History: Europe                | HIST 1002: 3 cr. HIST 9290: 3 cr. | HIST 1002: 3 cr. HIST 9290: 3 cr. | HIST 1002: 3 cr. HIST 9290: 3 cr. | HIST 1002: 3 cr. HIST 9290: 3 cr. |
| Individuals and Societies | History: Islam                 | HIST 9290: 6 cr.                  | HIST 9290: 6 cr.                  | HIST 9290: 6 cr.                  | HIST 9290: 6 cr.                  |
| Individuals and Societies | Geography                      | ANTH 9290: 3 cr. PHYS 9290: 3 cr. | ANTH 9290: 3 cr. PHYS 9290: 3 cr. | ANTH 9290: 3 cr. PHYS 9290: 3 cr. | ANTH 9290: 3 cr. PHYS 9290: 3 cr. |
| Individuals and Societies | Economics                      | ECON 2003: 3 cr. ECON 2004: 3 cr. | ECON 2003: 3 cr. ECON 2004: 3 cr. | ECON 2003: 3 cr. ECON 2004: 3 cr. | ECON 2003: 3 cr. ECON 2004: 3 cr. |

|                           |                  |                                      |                                      |                                      |                                      |
|---------------------------|------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|
| Individuals and Societies | Philosophy       | PHIL 9290: 6 cr.                     | PHIL 9290: 6 cr.                     | PHIL 9290: 6 cr.                     | PHIL 9290: 6 cr.                     |
| Individuals and Societies | Psychology       | PSYC 1001: 3 cr.                     | PSYC 1001: 3 cr.                     | PSYC 1001: 3 cr.                     | PSYC 1001: 3 cr.                     |
| Experimental Sciences     | Biology          | BIOL 1001: 3 cr.<br>BIOL 1002: 3 cr. | BIOL 1001: 3 cr.<br>BIOL 1002: 3 cr. | BIOL 1001: 3 cr.<br>BIOL 1002: 3 cr. | BIOL 1001: 3 cr.<br>BIOL 1002: 3 cr. |
| Experimental Sciences     | Chemistry        | CHEM 1001: 4 cr.<br>CHEM 1002: 4 cr. | CHEM 1001: 4 cr.<br>CHEM 1002: 4 cr. | CHEM 1001: 4 cr.<br>CHEM 1002: 4 cr. | CHEM 1001: 4 cr.<br>CHEM 1002: 4 cr. |
| Experimental Sciences     | Physics          | PHYS 1003: 4 cr.<br>PHYS 1004: 4 cr. | PHYS 1003: 4 cr.<br>PHYS 1004: 4 cr. | PHYS 1003: 4 cr.<br>PHYS 1004: 4 cr. | PHYS 1003: 4 cr.<br>PHYS 1004: 4 cr. |
| Mathematics               | Computer Science | COSC 1000: 3 cr.<br>COSC 1010: 3 cr. | COSC 1000: 3 cr.<br>COSC 1010: 3 cr. | COSC 1000: 3 cr.<br>COSC 1010: 3 cr. | COSC 1000: 3 cr.<br>COSC 1010: 3 cr. |
| Mathematics               | Mathematics      | MATH 1450: 4 cr.<br>MATH 1451: 4 cr. | MATH 1450: 4 cr.<br>MATH 1451: 4 cr. | MATH 1450: 4 cr.<br>MATH 1451: 4 cr. | MATH 1450: 4 cr.<br>MATH 1451: 4 cr. |
| The Arts                  | Visual Arts      | FIAR 9290: 6 cr.                     | FIAR 9290: 6 cr.                     | FIAR 9290: 6 cr.                     | FIAR 9290: 6 cr.                     |
| The Arts                  | Theatre Arts     | THAR 9290: 6 cr.                     | THAR 9290: 6 cr.                     | THAR 9290: 6 cr.                     | THAR 9290: 6 cr.                     |

**Note:** No course awards are granted for scores of H1-H3.

## Placement in Foreign Language Courses

Students in the Klingler College of Arts and Sciences, international business majors in the College of Business Administration, College of Education and speech pathology and audiology majors in the College of Health Sciences must satisfy a foreign language requirement for graduation. This may be accomplished by placement, course work, or both. The goal of the Department of Foreign Languages and Literatures is to place students in the most appropriate level of foreign language study based on their previous exposure to the language. For more information, see the Academic Regulations (p. 67) section in this bulletin.

## Admission with Non-degree Status

Students who wish to pursue courses for personal or professional development and who do not (yet) wish to pursue a degree may apply for admission with non-degree status. Although supporting credentials are not ordinarily required for the admission of non-degree students, Marquette reserves the right to request these if deemed appropriate to complete an admission review.

Students who have been dismissed from other colleges or universities may be admitted with non-degree status with the lapse of at least one term since the drop, and then only with the approval of the Committee on Admissions. Such applicants must file official transcripts from schools previously attended before their requests for admission will be reviewed. These transcripts must be sent directly to the Office of Undergraduate Admissions by the other institutions; they will not be accepted by Marquette if routed through the student.



Students who wish to apply for student financial aid must seek degree status and must apply for admission as a freshman or for admission as a transfer student.

Additional regulations for non-degree students appear in the academic regulations section of this bulletin.

## **Change of Status**

Applicants who enter any program at Marquette University with non-degree status may later apply for degree status, as either full time or part time through the Office of Undergraduate Admissions, according to the deadlines for the term. This application will not be considered for any student with an outstanding balance of \$3,000 or more already owed the university. Various criteria may be considered by the colleges during the review of the student's request for a status change, including, but not limited to: current Grade Point Average, cumulative Grade Point Average, prior academic record and prior academic misconduct issues. Students having earned a degree at Marquette and wish to continue the semester after the degree was earned, or return at a later semester, follow the readmission policies of the university. (See "Readmission to the University" in this section of this bulletin.)

## **Admission of Non-immigrant Students**

Each year, Marquette University is pleased to enroll a large number of non-immigrant students from countries throughout the world. Applicants for undergraduate admission who are not citizens or permanent residents of the United States participate in a specialized application process administered by the Office of International Education. This process is designed to allow international students the opportunity to demonstrate the four abilities that are necessary for successful study at Marquette: high academic ability, positive personal ability, strong English language ability, and sufficient financial ability.

To begin the application process, students who are neither U.S. citizens nor permanent residents, should contact the Office of International Education (OIE). The address is Alumni Memorial Union, 425; Marquette University; P.O. Box 1881; Milwaukee, WI 53201-1881, U.S.A. Students can also reach OIE by telephone at (414) 288-7289, by fax at (414) 288-3701, and by e-mail at [world@marquette.edu](mailto:world@marquette.edu). It is important to remember that the application process can take from one week to many months, depending primarily upon when the applicant can provide the required materials. An application, as well as a complete list of required materials, can also be found at the OIE website (<http://www.marquette.edu/oie>).

International students who ultimately enroll at Marquette will also be required to report to OIE as soon as they arrive at the university, when the office will provide advising and specialized orientation programs. OIE's administrators are also the Designated School Officials (DSOs), and students with certain visa statuses will need the involvement of OIE in many federal procedures such as extension of stay in the United States, return to the country after a visit abroad, employment and practical training applications, and allowance for part-time enrollment in certain situations.

## **Readmission to the University**

### **Readmission to First Undergraduate Degree**

A former Marquette University student who wishes to return after a lapse of one full term (excluding summer) or whose conditions of dismissal/withdrawal requires readmission to the university, must submit an Application for Readmission, to the Office of the Registrar located at Marquette Central (<http://www.marquette.edu/mucentral>). This readmission will not be considered for any former student with an outstanding balance of \$3,000 or more already owed the university, or who has an active Student Affairs/Development or Office of the Registrar registration hold on his or her record. Various criteria may be considered by the colleges during the review of the student's readmission request, including, but not limited to: current Grade Point Average, cumulative Grade Point Average, prior academic record and prior academic misconduct issues. A student's academic status at the time the

student withdrew, or was withdrawn from the university, remains in effect at the time of readmission. The decision for readmission is at the discretion of the dean and the decision of the dean is final.

Because Marquette conducts early registration which begins several months prior to the start of each term, it is to the student's advantage to apply for readmission as early as possible. Application forms are available online (<http://www.marquette.edu/mucentral>) and a completed application must be submitted to the Office of the Registrar no later than one week before the start of the session for which the student wishes to enroll. (For the College of Nursing deadlines refer to the Academic Calendar (<http://www.marquette.edu/provost/AcademicCalendars.shtml>)).

A re-entering student who has attended any other institution since leaving Marquette must request that an official transcript from each school be sent directly to the Office of the Registrar. The transcript(s) must be received before the application for readmission will be considered. The transcript(s) must be sent directly to the Office of the Registrar by the other institution(s); transcript(s) will not be accepted by Marquette if routed through the student. Records of applicants for readmission, including previous work at Marquette University, are subject to review and to a new evaluation of credits. A student who interrupts residence for two or more consecutive terms normally must meet the graduation requirements which prevail at the time of readmission and may not be readmitted to a degree, major and/or minor that is no longer active. A re-entering, non-degree student who wishes to become degree-seeking, must apply through the Office of Undergraduate Admissions and is held to the degree requirements of the catalog in effect at the time of admission as a degree-seeking student. (See "Admission with Non-Degree Status" in this section of this bulletin).

## **Readmission to Second Undergraduate Degree**

Marquette baccalaureate degree holders with good scholastic records may be admitted to candidacy for a second baccalaureate degree from Marquette. Application for readmission and acceptance into such a program is made through the readmission procedure in the Office of the Registrar. The appropriate dean will review the application and, if admission is granted, the applicant together with the dean will develop a specific plan of study. The readmission decision is at the discretion of the dean and the decision of the dean is final.

Candidates for the second degree must complete all of the requirements of the college that offers the degree. The minimum residence requirement is 32 additional semester hours of upper-division Marquette credit. Eligibility for graduation with university honors and rank-in-class do not apply to the second baccalaureate degree. Students with a baccalaureate degree who wish to further their education should consider the option of applying for admission to a graduate program. (**Note:** Completing an additional major may or may not constitute the completion of a second degree. Consult the college that offers the degree for further clarification.)

With the written approval of the college(s) offering the degrees, students with a good scholastic record who have not yet completed their first baccalaureate degree may enroll in courses that will count toward a second baccalaureate degree. In such an instance, an approved plan must be provided to the Office of the Registrar. The plan must delineate clearly which courses will apply to the first degree and which apply to the second degree. All other conditions specified in the paragraph above apply.

## **Immunization and Tuberculosis Screening Requirements**

All newly admitted and readmitted undergraduate, graduate, and professional students are required to provide proof of certain immunizations and complete a TB Screening questionnaire for tuberculosis. Prior to arrival on campus all new and readmitted students will supply this information to the Student Health Service. Proof of immunization and/or prior disease for Measles, Mumps, Rubella (MMR), Varicella (chicken pox), Tetanus/Diphtheria and completion of a tuberculosis screening questionnaire is required. Immunization and tuberculosis screening forms must be completed electronically. The forms and directions can be found on the Student Health Service website (<http://www.marquette.edu/shs/forms/>). Failure to submit the required immunization documentation and TB screening questionnaire within 30 days of the start of the student's first term or the readmitted term at Marquette will result in the placement of a registration "hold" on future registrations. The hold will be removed once the

immunization and screening requirements have been met. Health Sciences, Nursing and Dental students may be required by their departments or colleges to receive additional immunizations. Contact your department or college for specific requirements.

## Academic Programs

### Undergraduate Programs

Undergraduate programs consist of the Core of Common Studies and a specific major in one of the eight undergraduate colleges, the College of Arts and Sciences, College of Business Administration, College of Communication, College of Education, College of Engineering, College of Health Sciences, College of Nursing and College of Professional Studies. All undergraduates take the Core of Common Studies, courses in nine subject areas that provide a Jesuit liberal arts foundation (fully described in the Core of Common Studies section of the bulletin). Specific majors within each college are detailed in the college's section of the bulletin.

### Undergraduate Learning Outcomes

Students who complete an undergraduate degree at Marquette University will be prepared to:

- Pursue an integration of knowledge into a comprehensive, transcendent vision of life.
- Apply the knowledge and skills of an academic discipline, program or profession to a career or graduate study.
- Utilize critical thinking and reflection to effect positive change in themselves, others and their communities.
- Communicate in modes appropriate to various subjects and diverse audiences.
- Exercise just, responsible and competent leadership in professional, intellectual and societal contexts.
- Act for social justice within the diverse global human family.

Information about how the university assesses student abilities and preparation for these learning outcomes can be found at the Assessment website (<http://www.marquette.edu/assessment>). This website also contains outcomes data from 2006 to present.

# Accelerated Degree Programs

## Accelerated Degree Programs

Certain undergraduate programs, in partnership with the Graduate School, Graduate School of Management or Professional Schools, offer bachelor's to master's or bachelor's to professional degrees in an accelerated format.

### Programs administered through the Graduate School

- Biomedical Engineering; B.S.B.E. and MS. for information contact the department of Biomedical Engineering (<http://www.marquette.edu/chs/bisc/index.shtml>).
- Civil Engineering; B.S.C.E. and M.S. for information contact the department of Civil, Construction and Environmental Engineering ([http://www.marquette.edu/engineering/civil\\_environmental/](http://www.marquette.edu/engineering/civil_environmental/)).
- Clinical and Translational Rehabilitation Health Science; M.S. for information contact the program of Exercise Science (<http://www.marquette.edu/chs/exercise/>).
- Economics; B.A. and M.S.A.E. for information contact the department of Economics (<http://business.marquette.edu/departments/economics-academics>).
- Electrical and Computer Engineering; B.S.E.E. and M.S. for information contact the department of Electrical and Computer Engineering ([http://www.marquette.edu/engineering/electrical\\_computer/](http://www.marquette.edu/engineering/electrical_computer/)).
- International Affairs; B.A. and M.A. for information contact the department of Political Science (<http://www.marquette.edu/polisci/index.shtml>).
- Mechanical Engineering; B.S.M.E. and M.S. for information contact the department of Mechanical Engineering (<http://www.marquette.edu/engineering/mechanical/>).
- Political Science; B.A. and M.A. for information contact the department of Political Science (<http://www.marquette.edu/polisci/index.shtml>).
- Speech-Language Pathology; B.S. and M.S. for information contact the department of Speech Pathology and Audiology (<http://www.marquette.edu/chs/speech/>).

### Programs administered through the Graduate School of Management (GSM)

- Accounting; B.S. and M.S.A.E. for information visit the Accounting website (<http://business.marquette.edu/academics/msa>).
- Economics; B.S. and M.S.A.E. for information visit the Economics website (<http://business.marquette.edu/academics/msae>).
- Human Resources; B.S. and M.S.H.R. for information visit the Human Resources website (<http://business.marquette.edu/academics/mshr>).

## **Programs administered by the College of Health Science Professional**

- Direct Entry Physical Therapy; D.P.T.
- Master of Physical Therapy; M.P.A

Pre-dental Scholars (p. 31) and Pre-law Scholars (p. 34) programs are discussed in detail in the Academic Programs section of the Undergraduate Bulletin.

# Pre-Dental Scholars

## Pre-dental Scholars Program

The Pre-dental Scholars program is an accelerated program which allows students to receive conditional acceptance to Marquette's School of Dentistry. The Pre-dental Scholars program allows students to reduce from eight years to seven the total time needed to complete bachelor's and dental degrees. Pre-dental scholars enroll either in the Klingler College of Arts and Sciences or College of Health Sciences and complete their undergraduate studies in three years. Students are awarded a bachelor's degree upon successful completion of their first year in Marquette's School of Dentistry. For information, visit the Office of Admissions (<http://www.marquette.edu/explore>).

## Admission to the Pre-dental Scholars Program

Admission to the Pre-dental Scholars program is offered to prospective first year students during the spring of their senior year in high school and to current Marquette students in the spring of their first year. Admission guarantees the scholar a place in the Marquette University School of Dentistry, after completion of the third year of undergraduate studies (and having earned at least 98 credits), and as long as the student meets the academic and behavioral standards of the program, and earns a satisfactory score on the Dental Aptitude Test (DAT), as determined by the Marquette Dental Admissions Committee. Students who wish to be considered for the Pre-dental Scholars program must complete the Pre-dental Scholars application (<http://www.marquette.edu/explore/documents/PreDentScholar.pdf>).

## Undergraduate Curriculum

A typical bachelor's degree consists of four parts: University Core of Common Studies (UCCS) requirements, college curriculum requirements, major requirements and electives. In the first three years of the Pre-dental Scholars program, students will partially complete the major requirements and elective hours and finish all UCCS and college curriculum requirements. Courses taken in the fourth year (first year of dental school), count as requirements toward both the bachelor's and dental degrees.

## Approved Majors

**Klingler College of Arts and Sciences:** Biological Sciences or Physiological Sciences. The Pre-dental Scholars coordinator and faculty advisers will be responsible for the academic advising of the pre-dental scholars. See Curricula Information for course sequences in biological sciences and physiological sciences for pre-dental scholars.

**College of Health Sciences:** Biomedical Sciences. The assistant dean will be responsible for the academic advising of the pre-dental scholars. See Curricula Information for course sequences in biomedical sciences for pre-dental scholars.

## Academic Standards for the Pre-dental Scholars

Students will maintain a place in the Pre-dental Scholars program by fulfilling the following requirements:

- Earn a cumulative 3.500 grade point average at the end of each semester in the program.
- Receive a grade of no less than a B or better in all science or math courses.

- Complete a typical course load of 15-18 credit hours per semester.
- Under no circumstances will a student in this program be admitted to the School of Dentistry before completing six semesters of full-time course work at Marquette University.
- May not repeat any math or science courses.
- AP course work in any science or math will not satisfy prerequisite requirements.

Failure to meet the academic requirements in any semester will result in the scholar being placed on probation beginning the following semester. Courses taken in the probationary semester must be approved in writing by the scholar's academic adviser. If, at the end of this probationary semester, the scholar has not brought the cumulative grade point back up to a 3.500 and/or has received less than a B grade in any science or math course, he/she will be withdrawn from the program. If the scholar has returned to the academic standards by the end of the probationary semester, he/she will be returned to good standing in the program.

1. During this probationary semester, the scholar must complete a typical 15-18 credit course load and may not withdraw from any course(s).
2. A second probationary semester will not be permitted and will result in withdrawal from the program.
3. Failure to meet the academic standards during the spring semester of the junior year will result in withdrawal from the program and will impact your admission to Marquette's School of Dentistry.

**Appeals:** An appeal to any decision must be made to the Pre-dental Scholars Committee in writing and should elaborate on any personal or medical circumstances that affect your academic performance. Any appeal related to grades or classroom performance, however, must be taken up with the faculty involved or through the use of his/her department's grade appeal procedures.

**University Probation:** Behaviors and/or activities that lead to University Probation may result in removal from the program and impact admission to Marquette's School of Dentistry. Such activities include academic dishonesty or any activity deemed inappropriate, unethical, or illegal.

**Academic Dishonesty:** Any activity deemed inappropriate, unethical, or illegal, regardless of whether that behavior leads to University Probation, may result in removal from the program and impact admission to Marquette's School of Dentistry.

**Summer Course Work:** All Science and math courses must be taken at Marquette University unless your academic adviser agrees, in writing and in advance, that circumstances warrant that courses may be taken elsewhere. Science or math courses taken at junior, community, two-year, or technical schools are not acceptable and will not satisfy the science and math requirements of this program. Courses in the humanities are not subject to the above restriction, but must be approved from your college adviser.

**Dental Aptitude Test (DAT):** The DAT may be taken as early as the spring semester of the sophomore year, but no later than the fall semester of the junior year.

While the dental school is bound to hold a place for scholars who meet all requirements, students are not obligated to attend Marquette's School of Dentistry. Withdrawal from this program, whether voluntary or otherwise, does not necessarily compromise your ability to apply to Marquette's School of Dentistry through normal application procedures, providing that you are competitive with other applicants.

## Grades/Graduation/Graduation Honors

The undergraduate colleges will base their calculations for academic honors on all credits earned toward the bachelor's degree, including all Dental School credits completed through the term in which



the students satisfies all undergraduate degree requirements, including the minimum 128 credits needed for the degree.

## Financial Aid

Since pre-dental scholars will be spending only three years as an undergraduate at Marquette, the financial aid and scholarships received will be applicable only to the first three years at Marquette. After completion of the first three years or undergraduate degree, scholars must apply for financial aid and scholarships as an Independent Graduate/Professional student, rather than as an undergraduate.

Since the criteria for admission to the Pre-dental Scholars program match the criteria for many of the merit-based scholarships awarded by the Office of Undergraduate Admissions, it is highly probable that scholars in the program will also receive merit-based scholarships to Marquette University.

It is important to note that these scholarships, while renewable for up to eight semesters at the university, are only for undergraduate study. As a result, scholars will only be able to apply these scholarships to the first three years at Marquette, because once classes begin in Marquette's School of Dentistry, scholars will no longer be considered undergraduates. The fourth year or earlier of the scholarship will be forfeited.

Pre-dental Scholars would be eligible to apply in the third year for any Dental School financial aid and scholarships available to any student in the first year of Dental School.

## Pre-Law Scholars

### Pre-law Scholars Program

The Pre-law Scholars program is an accelerated program that provides a select group of students with conditional admission to the Marquette University Law School. The Pre-law Scholars program allows students to reduce from seven years to six years the total time needed to complete the bachelor's and law degrees. Pre-law Scholars enroll in the College of Arts and Sciences, College of Business Administration or the College of Communication, choose from a variety of approved majors and complete the undergraduate portion of their studies in three years. They are awarded a bachelor's degree upon successful completion of the first year in Law School, or at the end of the term in which they earn at least 128 credits and all other undergraduate requirements are fulfilled.

### Admission to the Pre-law Scholar's Program (prior to freshman year)

The Pre-law Scholars Selection Committee, comprised of members of the undergraduate colleges and the Office of Undergraduate Admissions, will give primary consideration to high school students who have followed a rigorous college preparatory curriculum and who have demonstrated a potential for success by fulfilling the criteria below:

- Application: Students will provide two applications for the program; the Application for Undergraduate Admission and a separate application for the Pre-law Scholars program.
- High school class rank (if available): Upper 10 percent
- Test Scores: SAT combined score of 1260 or ACT composite score of 28
- Essay: In 350 to 500 words, describe what personal and educational experiences you have had that have stimulated your interest in a law career.

### Deadlines and Notification

This application process coincides with the university's other scholarship competition deadlines, which generally fall on or shortly after Feb. 1. Notification of winners would occur in early March, thereby allowing students ample time to weigh their options. Download Program Application (<http://www.marquette.edu/explore/documents/PreLawScholar.pdf>).

### Undergraduate Curriculum

A typical bachelor's degree program in each of these colleges consists of four parts: University Core of Common Studies (UCCS) requirements, college curriculum requirements, major requirements and electives. In the first three years of the Pre-law Scholars program, students will complete the University Core of Common Studies, college curriculum and major requirements. Courses taken in the fourth year (the first year of law school), count as electives for the bachelor's degree and toward the completion of the law degree.

### Approved Majors

**Klinger College of Arts and Sciences:** Anthropology, Biological Sciences, Classical Languages, Classical Studies, Computational Mathematics, Computer Science, Economics, English, French, German, History, International Affairs, Mathematics, Philosophy, Physics, Political Science, Psychology, Social Welfare and Justice, Sociology, Spanish, Theology, Writing Intensive English.

The Pre-law Scholars coordinator and selected faculty members will be responsible for the academic advising of Pre-law Scholars.

**College of Business Administration:** Accounting, Business Economics, Entrepreneurship, Finance, Human Resource Management, Information Technology, International Business, Marketing, Operations and Supply Chain Management, Real Estate.

**Note:** Students majoring in accounting will need to take courses in summer school; also, depending on foreign language placement, international business majors may need to take summer school courses.

The assistant dean of the College of Business Administration and/or a designated business faculty member will be responsible for the academic advising of Pre-law Scholars.

**Diederich College of Communication:** Advertising, Broadcast and Electronic Communication, Communication Studies, Corporate Communication, Journalism, Public Relations, Theatre Arts.

**Note:** The minor that is normally required for the degree is waived for Pre-law Scholars. However, should a student decide to complete their undergraduate degree prior to entering Law School they will be required to complete the minor.

The Pre-law Scholars coordinator and selected faculty members will be responsible for the academic advising of Pre-law Scholars.

## Academic Standards for Pre-law Scholars

Admission to the Pre-law Scholars program is offered only to incoming first-year students, during the spring prior to the first year. Admission guarantees the Scholar a place in Marquette Law School, after completion of the third year of undergraduate studies (and having earned at least 100 credits) in their respective undergraduate college.

Students will maintain a place in the Law School by fulfilling the following requirements:

1. Enroll in spring semester Freshman Scholars Seminar (1 credit), "Lawyers in American Society." (College of Arts and Sciences and Business Administration only)
2. Attain a minimum cumulative 3.400 GPA in the undergraduate program, by the time of application/entrance to the Marquette University Law School.
3. Earn a score on the Law School Admissions Test (LSAT) that is equal to or greater than the median score of the preceding year's entering class. Students may take the LSAT as many times as needed to earn this score, but should bear in mind that the Law School relies on the average of all the LSATs a student has taken.
4. Meet the Law School's standards for character and fitness.

Students may choose to complete the fourth year as an undergraduate; in such a case, the student will be guaranteed a place in the Law School entering class the following year, provided the academic standards of the program are met. While the Law School is bound to hold a place for scholars who meet all requirements, students are not obligated to attend Marquette's Law School. Students may elect to complete the undergraduate degree in the major(s) chosen.

## Grades/Graduation/Graduation Honors

The undergraduate colleges will base their calculations for academic honors on all credits earned toward the bachelor's degree, including all Law School credits completed through the term in which the student satisfies all undergraduate degree requirements, including the minimum 128 credits needed for the degree.

The undergraduate colleges will accept for credit all Law School classes in which the student earns at least a grade of "D," the minimum necessary to earn credit for a course in the Law School. If a student

were to earn a grade lower than "D" in the first year of Law School, that student, in order to earn the bachelor's degree must make up those credits. This may be done by retaking the Law School course (as required by the Law School), or by taking an undergraduate course that fulfills credit requirements for the undergraduate college.

Normally, scholars will walk through the May graduation ceremony. However, because Law School grades are not posted until June, Pre-law Scholars will not receive their diploma for their bachelor's degree until the summer of the fourth year. However, students may be eligible to graduate earlier if they complete the minimum course and credit requirements prior to this time.

## **Financial Aid**

Since pre-law scholars will be spending only three years as an undergraduate at Marquette, the financial aid and scholarships received will be applicable only to the first three years at Marquette. After completion of the first three years or undergraduate degree, scholars must apply for financial aid and scholarships as an Independent Graduate/Professional student, rather than as an undergraduate.

Since the criteria for admission to the Pre-law Scholars program match the criteria for many of the merit-based scholarships awarded by the Office of Undergraduate Admissions, it is highly probable that scholars in the program will also receive merit-based scholarships to Marquette University.

It is important to note that these scholarships, while renewable for up to eight semesters at the university, are only for undergraduate study. As a result, scholars will only be able to apply these scholarships to the first three years at Marquette, because once classes begin in Marquette's Law School, scholars will no longer be considered undergraduates. The fourth year or earlier of the scholarship will be forfeited.

Pre-law Scholars would be eligible to apply in the third year for any Law School financial aid and scholarships available to any student in the first year of Law School.

# Educational Opportunity Program

## The Educational Opportunity Program

The Educational Opportunity Program (EOP) is an academic department of Marquette University that assists first-generation college students, underrepresented students and students from low-income families to succeed in higher education. EOP manages four major TRIO grants from the U.S. Department of Education, all of which share the common purpose of making a college education a realistic option for eligible students.

### EOP Student Support Services

EOP Student Support Services provide a network of services designed to increase the probability that each student will succeed in the university. Support services include need-based financial aid, a pre-freshman summer program, academic advising, specialized courses, and tutoring, as well as personal and career counseling. Students may apply to EOP-SSS when they apply for admission to Marquette University, after completion of the Marquette application or even after beginning studies at Marquette. The majority of EOP-SSS students enroll as entering freshmen and participate in the EOP-SSS summer program. For application information, call (414) 288-7593.

### EOP McNair Scholars Program

The McNair Scholars Program provides services designed to encourage eligible sophomores, juniors and seniors to prepare for doctoral study. During the academic year, McNair Scholars participate in seminars, meet with visiting minority scholars, and attend professional and undergraduate research conferences. In the summer, McNair Scholars receive eight-week paid research internships with Marquette faculty, visit graduate schools and enroll in a GRE preparation course. McNair Scholars are eligible for conference travel grants, research stipends, GRE fee waivers and admissions application fee waivers. For application information, call (414) 288-1771.

### EOP Precollege Programs

In addition to Student Support Services and McNair Scholars, EOP administers two pre-college programs to motivate and prepare high school students to enroll and succeed in college. These structured programs provide summer instruction and enrichment programs, as well as after-school activities during the school year. For further information, call (414) 288-7368.

## English as a Second Language Program

### English as a Second Language Program

Office of International Education website (<http://www.marquette.edu/oie/>)

The Office of International Education (OIE) provides advanced English language courses for students of other language backgrounds whose academic success at Marquette requires additional formal instruction in English reading, writing, and listening and speaking skills. All students are welcome to take these English courses, although the English Language Placement Test is required to determine appropriate placement. For incoming students whose evidence of English language ability does not assure adequate proficiency, the English Language Placement Test is mandatory and the results will be used to assign students to appropriate courses. English language (ESLP) courses are offered in both the fall and spring terms. There are also sections of ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2 designated for ESLP students. Up to six credits of ESLP course work may be counted toward degree requirements in all undergraduate colleges except Engineering. Contact the Office of International Education; Alumni Memorial Union, 425; (414) 288-7289 for information.

## Freshman Frontier Program

### **Freshman Frontier Program**

The Freshman Frontier Program is an academic support program for selected entering freshmen who do not meet regular admission requirements but show potential for success at Marquette. Students in this program must attend the summer studies prior to their freshman year. In addition they must carry a reduced course load (12-13 credit hours) during the fall and spring terms of their freshman year. The summer studies provide an opportunity for the student to enroll in a three-credit hour course from the regular freshman curriculum and two non-credit learning skills courses. Supportive services are provided during the summer studies and during the entire freshman year.

# Honors Program

## Mission

The mission of the University Honors Program is to provide an education rooted in a classical humanities curriculum, particularly as it is shaped by the Jesuit ideals of rigorous academic inquiry, a habit of reflection on knowledge and experience and, growing from these, a desire to bring about justice in the world. This curriculum is designed for a diverse body of motivated students who are especially well prepared for and impassioned by learning processes that are characterized by intense intellectual engagement. The Honors curriculum strives to enhance a student's regular university curriculum by enriching its core components, facilitating recognition of the essential relatedness of the core components to each other and to the student's intellectual discipline, and encouraging application of the core components to the student's visions, decisions, and actions in the world. The primary goal of the Honors Program is to offer students a transformative learning experience that provides more than a knowledge base and set of skills that can influence their interactions with the world; rather, the Honors curriculum is deliberately designed to foster a way of seeing, thinking, valuing and behaving that necessarily influences a person's interactions because it has become an authentic and intrinsic element of his or her identity and humanity.

The Honors Program cultivates such transformational learning by creating academic situations that (a) bring students in closer contact with their teachers and peers, (b) engage topics and issues in greater depth, subtlety, and complexity than is possible in larger non-honors courses that necessarily must serve a wider range of learning levels, (c) place more of the impetus for learning on the students themselves and (d) allow for a more individualized realization of educational objectives.

## Curricular Overview

Two basic elements define the Honors curriculum: Honors Program Foundation Courses and an Honors Program Seminar Series. Honors Program Foundation Courses, in keeping with the University Core of Common Studies, develop in students the fundamental abilities to think critically, reason analytically and express themselves coherently. In addition, these courses provide an appreciation for core academic areas of inquiry central to Jesuit education. Foundation Courses constitute the first mainstay of the Honors curriculum.

The second mainstay consists of Honors Program Seminars. These seminars focus on specific intellectual topics and are taught from a communal perspective that relies upon the efforts, insights, and perspectives of all individuals participating. They build progressively on one another from year to year and are designed to encourage the type of developmentally-staged learning that is essential to an integrated educational experience.

This distinctive curriculum turns a more typical college curriculum into a clearly-defined "Honors experience." Because the Honors curriculum enhances rather than replaces a student's disciplinary curriculum, it has been carefully structured to complement the wide variety of major and college requirements across campus.

To be more specific, the Honors Program Foundation Courses are either specially-designated sections of University Core courses (e.g. PHIL 1001 or 2310) or are courses that have been specially created by departments for the Honors Program (e.g. ENGL 1301 and 1302). Smaller than ordinary, restricted to Honors Program students, and taught by instructors committed to the educational ideals of the Honors Program, both types of Foundation Courses enrich the core curricular experience and provide an important foundation for participation in Honors Program Seminar Series.

The Honors Program Seminar Series consists of a four-year seminar sequence designed to promote the integration of knowledge gleaned from multiple content areas. The Second-Year Seminar, for example, builds upon the First-Year Seminar to develop progressively the student's abilities in communication, critical reasoning and analysis. Upon entering the Junior Year Seminar program, the student is required to use these skills to begin to make connections between a variety of fields



of inquiry and/or research. This integration of knowledge culminates in the final component of the Honors curriculum, the Full Circle Seminar that is taken during the student's senior year. Refer to the descriptions below for more detailed explanations of the Seminar Series.

## Honors Program Curricular Requirements

### Foundation Courses

Honors Program students are required to take the eight Foundation Courses listed below, all of which can be applied simultaneously to the University Core Curriculum (UCCS) requirements as well as to various college core curricula. Students should consult the University Bulletin for the specific core requirements of individual majors and colleges. The Foundation Courses are generally taken during the first and second year at the university.

**Note:** Students who complete ENGL 1301 and ENGL 1302 with a grade of B or higher and who did not receive AP/IB or other college level equivalent to ENGL 1001 and ENGL 1002 before entering college, will have satisfied the Core of Common Studies Rhetoric requirement ( ENGL 1001 and ENGL 1002). Either ENGL 1301 or ENGL 1302 will also satisfy the Core of Common Studies Literature and Performing Arts requirement (i.e., one of these courses may satisfy both the Rhetoric and the Literature and Performing Arts core requirements). Students may select any approved Core of Common Studies course to complete the necessary credit hours.

|  |  |    |
|--|--|----|
| ENGL 1301  | Honors English 1   | 3  |
| ENGL 1302  | Honors English 2   | 3  |
| PHIL 1001  | Philosophy of Human Nature   | 3  |
| PHIL 2310  | Theory of Ethics   | 3  |
| HIST 1001<br>& HIST 1002   | Growth of Western Civilization to 1715<br>and Growth of Western Civilization since 1715 (Course awards via<br>Advanced Placement, International Baccalaureate or transfer credit for<br>American, European or World History exempts Honors students from<br>HIST 1001 or HIST 1002.) | 6  |
| THEO 1001  | Introduction to Theology   | 3  |
| Second-Level Theology, must be Honors-designated; check with Honors Program office for more<br>information |  | 3  |
| Total Credit Hours   |  | 24 |

### Seminar Series

Each year Honors students are required to take one course in the Honors Program Seminar Series. These seminars build progressively upon earlier Honors experiences to nurture the type of intellectual acuity, independence, and maturity characteristic of Honors Program graduates. Note that all seminars can be taken either semester except for HOPR 1953 Honors Program First Year Seminar, which is offered only in the fall semester.

|              |   |   |
|--------------|---|---|
| HOPR 1953    | Honors Program First Year Seminar             | 1 |
| HOPR 2953    | Honors Program Second Year Seminar            | 2 |
| HOPR 3955    | Honors Program Undergraduate Research Seminar | 3 |
| or HOPR 3953 | Honors Program Junior Seminar                 |   |

## General Four-Year Course Plan for Honors Students

Because Honors Program students come from every college on campus, no single curricular plan is applicable to everyone. Both the Honors Program Director and the student's major adviser assist in designing individualized plans that best suit each individual's unique academic objectives. The typical sequence of Honors courses, however, is listed below. You should pair this chart with that provided for your major to come up with your individualized four-year plan.

| Freshman                  |       |             |       |
|---------------------------|-------|-------------|-------|
| First Term                | Hours | Second Term | Hours |
| ENGL 1301                 | 3     | ENGL 1302   | 3     |
| HIST 1001                 | 3     | HIST 1002   | 3     |
| HOPR 1953                 | 1     |             |       |
|                           | 7     |             | 6     |
| Sophomore                 |       |             |       |
| First Term                | Hours | Second Term | Hours |
| PHIL 1001                 | 3     | PHIL 2310   | 3     |
| THEO 1001*                | 3     |             |       |
| HOPR 2953*                | 2     |             |       |
|                           | 8     |             | 3     |
| Junior                    |       |             |       |
| First Term                | Hours |             |       |
| Second-Level Honors THEO* | 3     |             |       |
| HOPR 3955 or 3953*        | 3     |             |       |
|                           | 6     |             |       |
| Senior                    |       |             |       |
| First Term                | Hours |             |       |
| HOPR 4953*                | 3     |             |       |
|                           | 3     |             |       |
| Total credit hours: 33    |       |             |       |

- \* Can be taken either semester

## Academic Standards

Students must achieve a 3.200 cumulative grade point average in order to graduate with an Honors Program degree. If a student drops below a 3.200 in any given semester, he/she will receive a letter of warning from the director. If a student drops below a 3.200 cumulative GPA, he/she will be placed on Honors Program academic probation until the 3.200 cumulative is reattained. Students must earn a grade of C or better in a course for it to count toward the Honors Degree.

## Associated Academic Programs

### Study Abroad

The Honors Program believes that study abroad is a vital aspect of a student's college experience. While study abroad is not required, we encourage students to take advantage of the numerous opportunities offered through the University Study Abroad Office. Up to two Foundation Courses can be taken abroad in fulfillment of Honors Program requirements. Please contact the Honors Program and Study Abroad offices for more detailed information.

### Les Aspin Center

The Honors Program supports student internships at the Les Aspin Center. Again, credit for Foundation Courses is possible; students considering a semester at the Les Aspin Center should meet with the director at least one semester prior to their departure in order to make curricular arrangements.

## Reserve Officers' Training Corps Programs

### Air Force ROTC

Marquette University students have the opportunity to fully participate in the Air Force Reserve Officers' Training Corps Program. The required AFROTC courses are offered at Marquette University and are taught by resident full-time aerospace studies faculty.

Through this program, Marquette University offers its students the opportunity to prepare for initial active duty assignments as Air Force Commissioned Officers. In order to receive a commission, AFROTC cadets must complete all university requirements for a degree and courses specified by the Air Force. AFROTC courses are normally taken for credit as part of a student's electives. The amount of credit given toward a degree for AFROTC academic work varies as determined by the student's college and major. AFROTC offers four-, three- and two-year programs leading to a commission as an Air Force officer. Three- and four-year program students complete the general military course and the professional officer course, in addition to a four-week summer field training between their second and third years in the program. Two-year students complete only the professional officer course, but attend a five-week summer field training before entering the professional officer course.

General qualifications:

- Be a full-time student.
- Be a United States citizen (for scholarship appointment).
- Be in good physical condition.
- Be of good moral character.
- For pilot or navigator training, fulfill all commissioning requirements before age 29.

**General Military Course:** The first- and second-year educational program in Air Force aerospace studies consists of a series of one-hour courses designed to give students basic information on the role of the U.S. Air Force in the defense of the free world. All required textbooks and uniforms are provided free. The general military course is open to all students at Marquette without advance application and does not obligate students to the Air Force in any way.

**Field Training:** AFROTC field training is offered during the summer months at Maxwell Air Force Base in Montgomery, Ala. The Air Force pays all expenses associated with field training.

The major areas of study include physical training, drill and ceremonies, leadership skill development and application, career orientation, and an introduction to Air Force expeditionary training and Air Force deployment environment.

**Professional Officer Course:** The third and fourth years of Air Force aerospace studies instruction are designed to develop skills and attitudes vital to the professional officer. Students completing the professional officer course are commissioned as officers in the U.S. Air Force upon college graduation. All students in the professional officer course receive a nontaxable subsistence allowance of \$450 per month during their junior academic year and \$500 per month during their senior year. Students who want to enter the professional officer course should apply early in the spring term in order to begin this course of study in the following fall term. Final selection of students rests with the professor of aerospace studies.

**Leadership Laboratory:** Leadership laboratory is a cadet-centered activity. It is largely cadet planned and directed, in line with the premise that it provides leadership-training experience that will improve a cadet's ability to perform as an Air Force officer. The freshman and sophomore leadership laboratory program introduces Air Force customs and courtesies, drill and ceremonies, wearing the uniform, career opportunities in the Air Force, education and training benefits, and life and work of an Air Force

officer. Experiences include preparing the cadet for individual, squadron and flight movements in drill and ceremonies and preparation for the field training assignment prior to the junior year.

The junior and senior leadership laboratory program involves the cadets in advanced leadership experiences. Cadet responsibilities include planning and directing the activities of the cadet corps, preparing briefings and written communications. They also provide interviews, guidance, information and other services geared to increase the performance and motivation of underclassman cadets. All leadership lab students attend two sessions of physical fitness each week.

**AFROTC College Scholarship Program:** This program provides scholarships to selected students participating in AFROTC. While participating in AFROTC, students receive a monthly stipend starting at \$300 per month, along with paid tuition, fees, laboratory expenses and a fixed reimbursement for textbooks.

In order to be eligible for this scholarship, students must:

- Be a U.S. citizen.
- Be at least 17 years of age on the date of enrollment and under 31 years of age on Dec. 31 of the estimated year of commissioning.
- Pass an Air Force physical exam.
- Be selected by a board of Air Force officers.
- Have no moral objections or personal convictions that will prevent bearing arms and supporting and defending the Constitution of the United States against all enemies, foreign and domestic (Applicants must not be conscientious objectors.).
- Achieve a qualifying score on the Air Force Officer Qualifying Test.
- Maintain a quality grade point average.

High school students can apply for this scholarship late in their junior year or early in their senior year. High school students may get pre-applicant questionnaires by asking their guidance counselor or by writing or telephoning the nearest Air Force recruiting office. Completed pre-application questionnaires should be sent as soon as possible (to meet the earliest selection board) but will not be accepted if sent after December 1 the year before entering college. An online scholarship application is available at U.S. Air Force ROTC website (<http://www.afrotc.com/>). High school students who receive an Air Force scholarship may also be eligible for further subsidies from Marquette University.

For students already enrolled at Marquette, three- and two-year scholarships are available. Applications can be submitted to the professor of aerospace studies.

For more information on the Air Force ROTC program, visit the AFROTC website (<http://www.marquette.edu/rotc/airforce/>).

## Army ROTC

The Department of Military Science and Leadership (Army ROTC) was established under the auspices of the Klingler College of Arts and Sciences at Marquette University in 1951. Army ROTC (AROTC) is a leadership development program consisting of three interconnected components: 1) on-campus training, 2) off-campus training, and 3) the Leadership Development Program (LDP). By design, the three components dovetail for seamless, progressive and sequential leader development and prepare men and women to receive commissions as second lieutenants in the U.S. Army, Army National Guard, or the U.S. Army Reserve.

**On-Campus Component:** The on-campus component is the Military Science and Leadership (MISL) Curriculum. The curriculum consists of classroom learning, applied leadership labs, ROTC Battalion command and staff roles, and the Army Physical Fitness Training program. Far more comprehensive

than traditional curricula, each cadet will still receive textbooks, interact with the instructor during lessons and engage with multi-media technology.

**Off-Campus Component:** The off-campus component consists of a summer course designed to assess and develop cadet leadership potential. The Leader Development Assessment Course (LDAC) is a capstone training event that usually occurs at the end of the cadet's third year. This 33-day training event incorporates a wide range of subjects designed to develop and evaluate leadership ability. The event places each cadet and officer candidate in a variety of leadership positions, many of which simulate stressful combat situations. In addition to proving their leadership abilities and military skills, cadets must meet established standards in physical fitness, weapons training, communication and patrolling techniques. This paid event is the only summer training that a cadet is required to participate in.

**Leadership Development Program:** The Leadership Development Program (LDP) is the cornerstone of ROTC training and leadership development. The LDP is an individual-focused assessment process that standardizes leader performance measures. It organizes the extremely complex components of leadership into a useful learning model — standards of performance and a methodology to achieve them. The model accommodates all levels of proficiency and assures personalized development throughout a cadet's ROTC experience, from program entry to commissioning. Within the LDP, experienced and qualified observers (Military Science and Leadership Instructors) maximize individual potential by administering structured, progressively complex leadership experiences and cadet leadership skills are refined through self-assessment, peer assessment and instructor feedback.

We understand that today's students need flexibility, so we offer a variety of options in completing this leadership development program. The two primary options are: the four-year program and the two-year program.

**Four-year Program:** The four-year program is divided into two phases: the basic course and the advanced course. 1) The basic course is taken during a student's freshman and sophomore years. These courses are open to all students on an elective basis and upon successful completion students receive University credit. Students incur no military obligation for completing basic course requirements and these courses are free to all registered Marquette University students. 2) The advanced course is taken during a student's junior and senior year. Students in this program must have completed the basic course, have two years remaining in college and enter into a contract with the U.S. Army. Advanced course students take classes in leadership and participate in leadership laboratories to prepare for the five-week Leader Development Assessment Course during the summer between junior and senior years. Students receive monetary compensation for attending this camp.

**Two-year Program:** The two-year program is designed for students at four-year institutions who did not take AROTC during their first two years of college, students entering a two-year graduate course of study, or students who have previous military experience. Students begin formal training by attending the four-week paid Leaders Training Course (LTC). Successful completion of this camp is a pre-requisite for enrolling in the AROTC advanced course.

**Scholarships:** The Army offers a number of scholarship opportunities to Marquette students enrolled in the Senior ROTC Program. High School seniors can apply for four-year, three-year advance designee, and four-year nursing scholarships. These scholarships are applied for through the Army ROTC website (<http://www.goarmy.com/rotc.html>), and are awarded based upon merit, not financial need, by the Marquette University-Department of Military Science. These scholarships pay full-tuition annually with a \$1,200 textbook allowance. Scholarship students also receive at least a \$3,000 a year stipend during each year their scholarship is in effect.

Marquette University provides additional incentive funds for scholarship winners. Four-year scholarship winners receive \$7,000 annually toward tuition cap or university housing and board. Three-year advance designee winners receive \$13,000 in benefits for the freshman year. Once the scholarship benefits are applied in the sophomore year, Marquette University will still provide \$5,000 annually toward tuition cap or university housing and board.

Prospective students interested in a four-year Reserve Officers' Training Corps Scholarship should start the application process during their junior and senior year of high school. Four-year scholarship applications are only available at the Army ROTC website (<http://www.goarmy.com/rotc.html>) or by calling Cadet Command at (800) USA-ROTC for a paper application. Current college students may

apply for four-, three-, and two-year on-campus scholarships through the Marquette Department of Military Science.

In order to be eligible for a scholarship, students must:

- Be a U.S. citizen.
- Be under 31 years of age at the time of commissioning.
- Have a minimum cumulative GPA of 2.500 on a 4.0 scale.
- Have a minimum score of 920 on the SAT or 19 on the ACT.
- Satisfactorily explain any record of minor civil infractions.
- Pass a Department of Defense physical.
- Have no moral obligation or personal convictions that will prevent student from bearing arms and supporting and defending the Constitution of the United States.

Applications are submitted to the Department of Military Science. On-campus applications may be submitted at any time during the school year.

**Nursing Scholarships:** Marquette University is one of 41 colleges and universities to be designated as one of the U.S. Army's Nursing Schools. The Marquette ROTC department is able to offer four-year nursing scholarships annually to qualified applicants to the Marquette University College of Nursing. The application process and scholarship benefits are the same as those for other ROTC scholarships. The applicant should start the application process between the junior and senior years of high school. Nursing students already enrolled in the College of Nursing may also apply for two and three year on-campus scholarships through the ROTC department.

**Non-scholarship Program:** All students enrolled in the advanced course receive a monthly stipend to cover expenses during the school year. Successful completion of the advanced course leads to commissioning in the U.S. Army, U.S. Army Reserve or National Guard. Veterans: Men and women at Marquette University with prior military service may enroll directly into the advanced course with the permission of the Professor of Military Science. Veterans must be able to meet the age, citizenship and physical standards of the Reserve Officers' Training Corps program.

**Graduate Educational Delay:** Students may request that their active duty service be deferred to attend graduate school, law school, medical school or physical therapy school.

**Cross-enrollment:** Students enrolled in other southeast Wisconsin universities and colleges may, with approval of the dean of the Klingler College of Arts and Sciences, enroll in Military Science courses and participate in the AROTC program at Marquette while continuing their major curricula at these neighboring institutions.

For course descriptions, course credit and other information see the Arts and Sciences section of this bulletin. For complete information, contact the Department of Military Science; Gymnasium, A100; Marquette University; P.O. Box 1881; Milwaukee, WI 53201-1881 or call either (414) 288-7195 or (800) 563-7339 or visit the AROTC website (<http://www.marquette.edu/rotc/army>).

## Navy ROTC

The Naval ROTC Unit, established at Marquette University in 1940, provides qualified commissioned officers for the United States Navy and Marine Corps. Marquette's Navy ROTC program is also one of the largest in the country for commissioning Navy Nurse Officers. The mission is to develop midshipmen morally, physically, and intellectually for careers in the United States Naval Service. Graduates who complete all requirements will receive commissions and serve on active duty in the Navy or Marine Corps, with a minimum three-year commitment for non-scholarship students and four-year commitment for scholarship students.

Academically, the Naval Science Department, in the Klingler College of Arts and Sciences, teaches naval science courses and administers the program. All midshipmen are required to register for and participate in a two-hour weekly drill period. A naval science class is required each term, with few exceptions, for which Marquette grants credit toward graduation requirements. Midshipmen on scholarship or advanced standing also attend paid summer internship training for four to six weeks each summer. This summer training introduces midshipmen to the fleet, and the life of a junior naval officer. Summer training also provides an orientation to each of the different warfare specialties (air, surface, submarine and Marine Corps).

All NROTC students fall into one of two broad categories: scholarship or non-scholarship (college program). Some students will enter Marquette with a four-year scholarship earned on a competitive basis while still in high school. Scholarships are for full tuition, fees, a textbook stipend, laboratory expenses and include a subsistence stipend of \$250 to \$400 per month, depending on class year. In addition, Marquette provides incentive funds for scholarship winners. Four-year scholarship winners receive about \$7,000 per year toward university housing and board.

Students not on scholarship are termed college program students. They receive uniforms, naval science text books and \$350 or \$400 per month during their junior and senior years, respectively. All college program students are eligible to compete for Naval Education and Training Command scholarships. Students are selected on a competitive basis after completing a minimum of one term as an NROTC college program student. Selection boards meet throughout the year commencing in January to consider students based on their most recent term. Students may receive scholarship benefits ranging from one to seven terms. Once selected, the students receive all the benefits and incur the same active duty requirements as students in the regular scholarship program.

Navy option scholarship students, except nurse option, must complete two terms of calculus by the end of the sophomore year, and two terms of calculus-based physics by the end of the junior year. Navy option college program students must complete one year each in mathematics and physical science. Two terms of English and either HIST 3118 American Military History or POSC 4376 American National Security Policy are required for all Navy option students, except nurse option, and a world cultural awareness course is required for all Navy option students.

Marine Corps option students, scholarship and college program, are required to complete four of the above naval science class requirements, along with two Marine Corps naval science courses that are taught their junior and senior years. Calculus and physics are not required unless they are a prerequisite of the major field of study. Students are required to take HIST 3118 American Military History) or POSC 4376 American National Security Policy. In addition, each student is required to complete a six-week officer training course at Quantico, Va., during the summer between the junior and senior years.

All scholarships are awarded on the basis of merit and personal qualifications. The FAFSA is not required for consideration for naval scholarships.

For more information, contact the Department of Naval Science; Marquette University; P.O. Box 1881; Milwaukee, WI 53201-1881, call (414) 288-7076 or (800) 554-NAVY or visit the NROTC website (<http://www.marquette.edu/rotc/navy/>).



# Study Abroad Program

## Study Abroad Programs

As the international office of a Catholic, Jesuit university, the Office of International Education (OIE) seeks to inspire in each member of the Marquette community a process of personal, professional and intellectual transformation rooted in an expanded awareness, appreciation, understanding and knowledge of the diversity and interconnectedness of the world's peoples and cultures. In order to facilitate this transformation, OIE fosters mutually beneficial academic, cultural and personal relationships that empower community members to become women and men for others through discernment and responsible action.

## Study Abroad Learning Outcomes

After completing a Study Abroad program, a Marquette student is able to:

1. Appreciate others he/she encounters from different backgrounds.
2. Describe the basic structures of the society of the host country (government, economy and commerce, health care, education, social services, religion, etc.).
3. Recognize one's self and cultural context in relation to others.
4. Demonstrate a commitment to social responsibility in the global sphere.
5. Function effectively within a new environment or system.
6. Demonstrate a level of facility communicating with people from other ethnic and/or linguistic backgrounds.

In order to facilitate and achieve the above outcomes, Marquette offers a diverse palette of academic year, semester, summer and short-term faculty-led programs. These include Marquette sponsored programs with on-site directors, exchange and study abroad programs with partner universities and short-term faculty-led programs.

Students are encouraged to inquire about study abroad opportunities as early as freshman year with the Office of International Education and within their colleges. Students should regularly refer to the list of ever expanding available programs on the OIE website (<http://www.marquette.edu/oie>).

## Policies and Procedures

All Marquette students seeking academic credit from an overseas institution toward their degree at Marquette University are required to follow the study-abroad policies and procedures as outlined below, in the study abroad handbook, and online (<http://www.marquette.edu/abroad>). This applies to all students regardless of the length of the term abroad and the sponsoring institution.

- Students planning to study abroad must be in good academic and disciplinary standing.
- All students planning to study abroad are required to have at least one meeting with an adviser in the Office of International Education (**Note:** College of Business Administration students must meet with Dr. Jamshid Hosseini)
- All Marquette students, regardless of college or program, must attend the general pre-departure session held at the end of the semester prior to studying abroad. Students must also attend the relevant program-specific orientation.

- All students planning to study abroad for academic credit are required to complete and submit the general Marquette study abroad required online application by October 1 for the spring semester and by March 1 for the summer term, fall semester, or academic year. Upon acceptance to a program, students will also be required to submit additional materials and, if necessary, complete further program specific requirements. General and program-specific documents and a time line of the application process can be found online (<http://www.marquette.edu/abroad>).
- Students are responsible for informing the Office of International Education of any changes or cancellations to their study abroad plans that may occur after the deadline for submitting the general Marquette study abroad required documents on October 1 or March 1. Students are also responsible for informing their program of any changes and/or cancellations.
- In order to maintain continuous enrollment, all students who will be studying abroad (both during the academic year and summer) must register for the appropriate study abroad course as advised by the Office of International Education. These courses are limited to use by students earning credit through an approved institution abroad. All study abroad must be approved by Marquette prior to enrollment in the study abroad placeholder course.
- All students are required to enroll in the mandatory comprehensive overseas health insurance program through Cultural Insurance Services International (CISI) for the duration of their studies abroad.
- Students are responsible for obtaining all necessary travel documents including, but not limited to, passports, visas and airline tickets.
- Students are responsible for coordinating any and all housing arrangements at Marquette for the semester or year they are away and for the semester they return to campus.
- Students may study abroad through other approved non-Marquette programs subject to approval from the Office of International Education and their college. Any students studying through approved non-Marquette programs are required to complete a consortium agreement between Marquette and the sponsoring institution provided that any of the following are true:
  1. The student is seeking any financial aid (including alternative loans) for the term of study abroad (applies to the fall, spring and summer terms) and/or
  2. The student needs verification of at least half-time enrollment in order to defer loan repayments due to a prior history of receiving federal financial aid (applies to semester terms only) and/or
  3. The student needs full-time enrollment for health insurance purposes (applies to semester terms only).

# Summer Studies

## Summer Studies

Summer Studies offers courses that are applicable to degrees in all colleges and schools of the university in the following session formats: two consecutive six-week sessions and several additional sessions longer than the traditional six-week format. Short courses varying in length are offered within various sessions.

Domestic and foreign travel programs are offered each summer and provide students with an exciting off-campus study experience.

Summer Studies provides an opportunity for students to take needed course work, accelerate their programs of study and enroll in courses of personal interest.

For admissions and course offering information, visit the Summer Studies website ([http://www.marquette.edu/programs/summer\\_studies/](http://www.marquette.edu/programs/summer_studies/)).

## Les Aspin Center for Government

### **Washington, D.C., Internship Program**

The Marquette University Les Aspin Center for Government offers students the opportunity to study in Washington, D.C., as part of their degree program. Students live and work on Capitol Hill, participate in internships with the House, Senate, FDA and other government agencies, and receive hands-on training in political processes. Students attend lectures and symposia by leading figures in Congress, government agencies and business, gaining insight to the inner workings of the democratic process and the relationships that exist between government and business. Programs are offered during each fall and spring term plus two summer sessions.

The center also conducts periodic programming in Africa. For information, contact the center at (800) 544-1789.

A local initiative of the Aspin Center is the Kleczka Internship. Located on the Marquette campus in Milwaukee, students are selected to participate in a 3-credit paid internship and placed in a variety of positions in state, county and local governmental institutions giving them firsthand exposure to how government works. Information on local Aspin Center programming can be obtained by calling (414) 288-7446.



# Academic Regulations

## Academic Advising

### The University's Advising Philosophy

Advising fosters intellectual, moral, and personal growth in students. It is informed by the teachings of Ignatius Loyola, who advocated that Jesuit schools should educate students who will lead and be a leaven for good. This requires that students obtain both a firm base of knowledge and a strong sense of personal responsibility. Thus, Marquette seeks to educate on both the intellectual and moral level. The mark of academic success is the ability of students to function as well-educated, responsible members of society.

### Goals for Advising

The primary purpose of advising is to enhance the academic performance of students. The result of this process should be graduates who are demonstrably committed to academic excellence and who assume responsibility for their own actions. Their growth toward this goal can be observed in their ability to make sound personal and academic choices.

Advising is much more than class scheduling, although that is obviously a regular component. In the same way that formal study affects a student's intellectual growth, advising is an ongoing developmental process that helps students discern their life/career goals, and contribute to their values, their personal fulfillment and the educational plans for reaching those goals. As part of this process, advisers can give attention to matters relating to academic performance and also be watchful for non-academic issues that could have an impact on student academic performance.

### Adviser and Student Expectations

Marquette University is committed to the shaping of students' intellectual and personal development. Academic advising contributes substantially to this mission. It assumes a good working relationship between advisers and students. At Marquette University we strive to provide advising within the following set of expectations:

Students may anticipate the following from advisers:

1. The adviser recognizes the goal of advising is the academic success and personal growth of the student.
2. The adviser works to develop good rapport with the student and in doing so, also serves as a mentor.
3. The adviser has knowledge of major course content, course sequencing, the University Core of Common Studies (UCCS) and graduation requirements as provided in the bulletin.
4. The adviser is available during his or her regular office hours or by appointment and prepares for each scheduled session by reviewing the advisee's record before the meeting.
5. In addition to showing common courtesy toward the advisee, the adviser listens carefully, provides encouragement and support and respects the advisee's ability to make decisions.
6. The adviser helps the student develop strategies for academic success and understand the possible associated consequences.

7. The adviser identifies and addresses potential conflicts that might arise in the students' schedule and develops a long-term schedule to avoid conflicts (e.g., prerequisites, infrequent offerings, etc.).
8. The adviser informs advisees of opportunities and information, particularly related to majors and minors but also including internships, research, graduate and professional school opportunities.
9. The adviser understands that academic performance can be influenced by factors unrelated to the classroom and is prepared to deal with these issues and make referrals as necessary.
10. The adviser knows where to direct a student to additional resources when necessary.

Advisers may anticipate the following from students:

1. The student accepts full responsibility for his or her academic success and acknowledges that the adviser is a major resource for achieving that success.
2. The student understands bulletin information including graduation requirements.
3. The student acknowledges that successful advising requires openness and honesty with the adviser.
4. The student works to develop a good rapport with his or her adviser.
5. The student has a desired expectation for his or her Marquette experience and comes to meetings prepared to discuss career goals, co-curricular interests, etc.
6. The student prepares for advising sessions by developing semester schedules that meet certain long-term goals such as fulfilling the requirements of the UCCS and college curriculum.
7. The student should have knowledge of the classes he or she is interested in taking as well as alternative options, and recognizes that his or her plans may change.
8. The student shows common courtesy toward the adviser including honoring all advising appointments once scheduled.
9. The student seeks appropriate help to solve problems that may adversely affect his or her academic performance. The student recognizes that the academic adviser is the appropriate person with whom to start this process.
10. The student ensures that all questions and concerns are adequately addressed.

This statement evolved from a collaborative effort that included members of the Marquette University Student Government and the Committee on Academic Procedures. Reviewed by Marquette University General Counsel, February 1, 2006. Revised and approved by the University Board of Undergraduate Studies, March 1, 2006. Approved by the Academic Senate, March 20, 2006

The Klingler College of Arts and Sciences Pre-major Advising Manual (2003-2004) is the source for much of the information contained herein.

## Academic Honesty Policy

### Preamble

Marquette University is committed to developing the whole person, spiritually, mentally, physically, socially, and ethically. As an institution of higher education, love of truth is at the center of the university's enterprise, and academic honesty, in all its forms, is an explicit value of the university. The development and practice of academic honesty and integrity, both inside and outside the classroom, are expectations for all members of the university community. In order to cultivate academic honesty

in its students, instructors take every opportunity to help students appreciate both the process and the principles of academic integrity.

Academic honesty can be best understood by academic ethical standards guiding faculty in their work. That is to say, an individual's contributions, in terms of words and scholarly findings, belong to him or her alone. Furthermore, the integrity of that which one claims to be scholarly knowledge rests on the accurate demonstration of the assumptions and reasoning that produced it. These standards are used as the implicit basis for teaching and learning in the university.

In order for instructors to fairly assess the quality and quantity of a student's learning as determined by work that students represent as their own, a relationship of trust between instructor and student is essential. Because violations of academic integrity most often involve, but are not limited to, efforts to deceive instructors, they represent a breach of the trust relationship between instructor and student and undermine the core values of the university.

## **Responsibility for Academic Honesty**

This policy applies to all undergraduate programs and to students and faculty in some programs under the auspices of the Graduate School. Graduate School generically refers to all graduate and professional schools and students, and terms such as associate vice provost or associate/assistant dean will refer to the appropriate official in the other colleges/schools. Graduate School students should appeal to the Graduate School while professional students should appeal to the appropriate person in their college or school, i.e., Graduate School of Management or College of Health Sciences. School of Dentistry and Law School students must follow the policies put forth by their respective schools.

Academic honesty consists of truth telling and truthful representations in all academic contexts. All members of the academic community have a responsibility to ensure that academic honesty is maintained. In what follows the wording "chair" refers to either a department chair or an equivalent official, "associate dean" refers to either an associate dean or an equivalent official, or in the case of the Graduate School it will refer to the assistant vice provost for graduate programs, the word "college" refers to a college, school, or other academic unit, and the words "assigned college" refers to the degree granting college or school (i.e. for graduate students the assigned college is the Graduate School).

Faculty have primary responsibility for:

1. Upholding and enforcing university-wide principles of academic honesty and integrity and informing students of these principles including any qualifications that may be operative in the classes they are teaching.
2. Minimizing opportunities for academic dishonesty in their courses.
3. Confronting students suspected of academic dishonesty in a way that respects student privacy.
4. Affording students accused of academic dishonesty the right to appeal any resulting disputes to disinterested parties for hearing and resolution.
5. Assigning an appropriate grade to a student who engages in academic dishonesty.
6. Reporting all instances of academic dishonesty to the associate dean of the college offering the course.
7. Protecting the anonymity of any student reporting an incident of academic dishonesty to the extent permitted by due process required for the accused and other legal requirements.

Students have responsibility for:

1. Refraining from cheating and plagiarism.
2. Refusing to aid or abet any form of academic dishonesty.



3. Notifying professors and/or their adviser about observed incidents of academic misconduct. The anonymity of a student reporting an incident of academic dishonesty will be protected to the extent permitted by law.

## Definitions of Academic Dishonesty

Academic dishonesty applies equally to electronic media and print, and involves text, images, and ideas. It includes but is not limited to the following examples:

### Cheating

1. Copying from others during an examination.
2. Communicating exam answers with other students during an examination.
3. Offering another person's work as one's own.
4. Taking an examination for another student or having someone take an examination for oneself.
5. Sharing answers for a take home examination or assignment unless specifically authorized by the instructor.
6. Tampering with an examination after it has been corrected, and then returning it for more credit.
7. Using unauthorized materials during an examination.
8. Allowing others to do the research and writing of an assigned paper (including use of the services of a commercial term paper company).

### Dishonest Conduct

1. Stealing or attempting to steal an examination or answer key from the instructor.
2. Changing or attempting to change academic records without proper sanction.
3. Submitting substantial portions of the same work for credit in more than one course without consulting all instructors involved.
4. Intentionally disrupting the educational process in any manner.
5. Allowing another student to copy off one's own work during a test.

### Plagiarism

Plagiarism is intellectual theft. It means use of the intellectual creations of another without proper attribution. Plagiarism may take two main forms, which are clearly related: 1. To steal or pass off as one's own the ideas or words, images, or other creative works of another and 2. To use a creative production without crediting the source, even if only minimal information is available to identify it for citation.

Credit must be given for every direct quotation, for paraphrasing or summarizing a work (in whole, or in part, in one's own words) and for information that is not common knowledge.

### Collusion

Any student who knowingly or intentionally helps another student perform any of the above acts of cheating, dishonest conduct, or plagiarism is subject to discipline for academic dishonesty.

## Research Misconduct

Marquette University has a duty to ensure the integrity of research and will respond to any allegation of research misconduct in a thorough, competent, timely, objective and fair manner. Research misconduct is defined as fabrication, falsification or plagiarism in proposing, performing or reviewing research or in reporting research results. The research misconduct policy applies to faculty, students, and others who are employed by or affiliated with Marquette University. Students who are accused of misconduct related to grant-funded research shall be governed by the procedures of the research misconduct policy, found on the Office of Research and Sponsored Programs website ([http://www.marquette.edu/orsp/documents/ResearchMisconductPolicy1\\_09.pdf](http://www.marquette.edu/orsp/documents/ResearchMisconductPolicy1_09.pdf)). Students who are accused of misconduct related to research that is not grant-funded and is a part of a student's academic program will be governed by the University Policy on Academic Honesty, found on the Marquette Central website ([http://www.marquette.edu/mucentral/registrar/policy\\_honesty.shtml](http://www.marquette.edu/mucentral/registrar/policy_honesty.shtml)). Any uncertainty related to which policy will govern a given situations will be decided by the research integrity officer.

## Consequences of Academic Dishonesty

Regardless of how alleged acts of academic dishonesty are brought to light, faculty and instructors retain the responsibility and the authority to investigate all allegations, although, as outlined below, university administrators may lead these investigations. Because the consequences for academic dishonesty can be severe, the decision to penalize a student for such infractions must be the result of a thorough review. The procedures to be used for adjudicating suspected acts of academic dishonesty are determined by the nature of the misconduct and the seriousness of the offense.

## Procedures for Incidents Of Academic Dishonesty

Students found committing acts of academic dishonesty will be subject to the Marquette University procedures for incidents of academic dishonesty. In what follows the wording "chair" refers to either a department chair or an equivalent official, "associate dean" refers to either an associate dean or an equivalent official, or in the case of the Graduate School it shall refer to the assistant vice provost, the word "college" refers to a college, school or other academic unit and the words "assigned college" refers to the college granting the degree (i.e. for graduate students the assigned college is the Graduate School).

## First Offenses

Many, perhaps most, incidents of academic dishonesty involve accusations which are based on clear evidence and which are not contested by the accused student. In such cases, if the infraction is relatively minor and there is no indication that the accused student has previously been involved in such incidents, it is most appropriate that the matter be resolved between the student, the faculty member and the chair of the department offering the course.

When a faculty member has evidence of a student's academic dishonesty, the faculty member must initiate communication with the student within 15 calendar days of discovering evidence of academic dishonesty. The faculty member must then present the evidence to the student in a private meeting, always with a facilitator present (e.g., department chair or designee). This meeting should take place within 15 calendar days of the student being notified of the allegation or as soon thereafter as possible. If, after this meeting, it is decided that the student did participate in academic dishonesty the faculty member may follow up with one or more of the following actions:

1. Issue a reprimand to the student.
2. Require repetition of the questionable work or examination.

3. Reduce the grade on the questionable work or examination (faculty can reduce the grade down to and including an F or zero).
4. Recommend that the student be administratively withdrawn from the course.
5. Recommend that the student be given a final grade of F for the course.

The faculty must maintain careful documentation of the incident.

It is essential that any disciplinary action be reported in writing to the student in a letter from the faculty member. The faculty member is strongly encouraged to consult with his or her associate dean for questions about appropriate discipline and the form and content of the letter sent to the student. Reference to the "Marquette University Policies on Academic Honesty" should be included in the letter. The letter to the student must be sent out within 15 calendar days of the meeting and may be sent by e-mail with settings for "notify sender of receipt and of opening". At the same time the letter is sent to the student, a copy must be sent to the department chair and associate dean of the college offering the course. In turn, within 5 working days, the associate dean of the college offering the course will communicate in writing details of the incident to the associate dean of the student's assigned college, to ensure that penalties assessed are commensurate with the offense and that repeated infractions can be detected and dealt with appropriately. The associate dean of each college is responsible for maintaining confidential records concerning academic dishonesty of students enrolled in that college. All letters reporting faculty imposed academic penalties for academic misconduct will be included in these files.

In most incidents the disciplinary response and procedure for incidents of academic dishonesty concludes at this step.

## **Student's Appeal**

Students have the right of appeal of the allegations of academic dishonesty and the disciplinary actions of the instructor if the student believes the alleged incident of academic dishonesty and/or resultant academic discipline to be unfounded, biased or capricious. In this case the student should submit a formal written appeal stating the grounds for appeal and available documentation to the associate dean of the college offering the course within 15 calendar days of the notification of the instructor's decision. Upon receipt of the appeal the associate dean may convene a review of the student's actions by a college panel. The associate dean and/or panel reviews the details of the student's actions and may ask to speak to the student, the instructor, the chair of the department offering the course, associate deans and others. The associate dean of the college offering the course will determine the appropriate disciplinary action and, within 15 calendar days of receipt of the appeal, will provide a written statement to all parties concerned.

## **Disciplinary Recommendations by Faculty of ADW or F Grades**

If the faculty member recommends that the student be administratively withdrawn from the course and assigned a final grade of ADW or that a final grade of F be assigned, the associate dean of the student's assigned college (the assistant vice provost for graduate programs) will review the details of the incident, make the final decision within 5 working days of receipt of the request and provide a written statement to all parties concerned.

Students have the right to appeal the decision of the associate dean to issue grades of ADW or F to the dean of the student's assigned college (the dean of the Graduate School in the case of graduate students). This appeal must be made within 15 calendar days of the notification of the grade change. The final decision to uphold or modify the action of the associate dean will be provided to the student and associate dean within 15 calendar days of receipt of the appeal. The decision of the dean is final.

## **Repeat or More Serious Offenses**

When the associate dean (in the case of graduate students to the assistant vice provost for graduate programs) of the student's assigned college is aware of or determines that the student has engaged in multiple incidents of academic dishonesty or the incident in question is of a more serious nature he/she will convene a review of the student's actions by a college panel within 15 calendar days of learning of the most recent incident. In the case of graduate students, such a panel will be composed of a sub-committee of the University Board of Graduate Studies. More serious incidents may involve repeat offenses, cause injury or harm to others outside the academic community or other actions deemed to warrant additional consideration. These incidents of academic dishonesty call for more serious disciplinary action up to and including campus wide sanctions of suspension or expulsion. Where incidents involve possible violations of the University Code of Conduct, in addition to the alleged academic dishonesty, consultation with the Office of Student Development is recommended.

Each college will have guidelines for the composition and selection of the college panel to assure a review by experienced faculty and/or administrators not directly involved in the incident(s). The panel reviews all aspects of the student's record, the details of the student's behavior and may ask the student, instructor(s) and others to speak with the panel. Within 15 calendar days of being given the charge, the panel will forward its recommendations for appropriate and just disciplinary action to the associate dean (in the case of graduate students to the assistant vice provost for graduate programs) of the student's assigned college with a copy to the dean. All disciplinary decisions that involve a campus wide sanction, such as suspension or expulsion, will be made by the dean of the student's assigned college with all other actions being taken by the associate dean.

Within 15 calendar days of receiving the panel's recommendation, the associate dean or dean, as appropriate, makes the decision known to the student via written documentation that includes a description of the academic dishonesty, the process the decision went through, the resulting decision and appeal procedures. A copy of the decision is placed in the student's academic file with a copy provided to the Office of the Provost.

Students have the right of appeal of the allegation of academic dishonesty and the disciplinary actions of the associate dean or the dean of the student's assigned college. Such appeals must be made within 15 calendar days of receipt of the letter. Actions taken by the associate dean should be appealed to the dean of the student's assigned college. The final decision to uphold or modify the action of the associate dean will be provided to the student and associate dean within 15 calendar days of receipt of the appeal. The decision of the dean is final.

For actions of the dean involving campus-wide sanctions, such as suspension or expulsion, students have the right of appeal to the Office of the Provost. A formal written appeal stating the grounds for appeal and available documentation is to be submitted to the Office of the Provost within 15 calendar days of the notification of the decision of the dean. The provost or designee will conduct a review of the appeal materials, may seek additional information, and may consult with the student, faculty, chair(s), associate dean(s), deans and others. The final decision to uphold or modify the action of the dean will be provided to the student and to the dean and associate dean of the student's assigned college within 15 calendar days of receipt of the appeal. A copy of the provost's decision will be placed in the student academic file. The decision of the provost is final.

## **Other Considerations**

The associate dean may exclude students who have on file recorded acts of academic dishonesty, as defined by this policy, from consideration for academic honors at graduation. Exclusion from consideration for honors is not for the purposes of this policy to be considered a campus wide sanction.

## **Maintenance of Disciplinary Records**

Records relating to academic dishonesty will be maintained by the associate dean of the student's assigned college to promote consistency of penalties for academic dishonesty and to ensure appropriate action against repeat offenders. In order to ensure that minor and nonrecurring infractions do not negatively impact a student's career beyond Marquette University, a student may petition to

the associate dean of his or her academic college to have relevant academic disciplinary records expunged after the student graduates or leaves the university. The associate dean has sole authority to consider and to grant or deny such petitions. The university will release a student's disciplinary records to potential employers, governmental agencies, other educational institutions or other organizations or individuals only if authorized to do so by the student in question or if compelled by law.

## Professional Ethics and Standards

These procedures do not supersede or take the place of procedures established for students who violate professional standards applicable to a particular program or college. Separate procedures and/or outcomes may be invoked when students are found in violation of professional standards or codes of ethics related to special programs, licensure or certification as determined by the program's external or internal professional requirements. It is the student's responsibility to know and follow these standards/codes of ethics, which are part of the student's academic program. These special expectations and procedures, including the appeals process, will be provided to the student upon enrollment in the program and are available in published form in the administrative offices overseeing these programs.

This policy evolved from a collaborative effort that included members of the Marquette University Committee on Academic Procedures, Marquette University Board of Undergraduate Studies and the Marquette University Board of Graduate Studies. These groups would like to express their gratitude to the University of California–Irvine whose UCI Academic Senate Policy on Academic Honesty provided the framework for the resulting document.

## Academic Probation and Dismissal (Scholastic Censure)

**Grade Point Deficiency**—All students are expected to maintain at least a C (2.000) grade point average in Marquette work.

Students who do not maintain at least a 2.000 cumulative grade point average in Marquette work are subject to review by their academic college and possible academic dismissal at the discretion of the student's college or program. All students who do not maintain at least a 2.000 cumulative average in Marquette work and whose grade point average falls within the following categories will be automatically reviewed by his/her college and are subject to possible academic dismissal. Once academically dismissed, the student must be readmitted and/or reinstated to the university. Academic dismissal is recorded on the official transcript of the university as, 'Required to Withdraw for Academic Reasons'.

| Degree Hours Earned | Cumulative Grade Point Average |
|---------------------|--------------------------------|
| 0-34                | Less than or equal to 1.5      |
| 35-70               | Less than or equal to 1.800    |
| 71-102              | Less than or equal to 1.900    |
| 103-                | Less than or equal to 1.950    |

**Failing Grades**—When a student is allowed to continue at Marquette with either excessive grade point deficiency or failing grades, the college dean, will prescribe, in writing, conditions under which a student is allowed to continue. Students who fail to meet the conditions for progress stipulated by the college dean will be academically dismissed.

Any deviation from this policy appears in the appropriate college or school section of this bulletin.

## Attendance

The undergraduate attendance policy specifies the role of the student, the instructor and university administrators in cases when students are absent from one or more classes. The policy aims to clarify several aspects of attendance, including, but not limited to the following five. Please read the entire policy for full details.

1. With few exceptions, no distinction is made between excused and unexcused absences.
2. Instructors determine if work (including tests and examinations) may be made up as a result of one or more absences.
3. University offices do not provide documentation of absences.
4. Students may be withdrawn from a course as a result of excessive absences.
5. Lack of participation in an online course may lead to the recording of an absence for the student.

Students are responsible for attending all class meetings for courses in which they are registered. Any absence, regardless of the reason, prevents students from getting the full benefit of the course and as such, no distinction is made between excused and unexcused absences, with the following exceptions (see below for further guidance):

1. Absences resulting from legal obligations (such as jury duty).
2. Absences resulting from university sanctioned activities and related travel.

Instructors should determine and notify students in writing the first day of class, preferably in the course syllabus, if any component of the grade is based on attendance and/or participation, and whether or not the opportunity to make up missed work, including assignments, quizzes, examinations and so forth, will be provided. If so, instructors should specify the conditions students must meet to be given the opportunity to make up missed work. The opportunity to make up work is considered a privilege, not a right.

Since it is up to each student to understand and abide by each instructor's policy on issues related to attendance, students should consult the instructor if any portion is not understood. If an instructor does not provide information about make up work in writing, students can expect to be given a reasonable amount of time to complete work this is missed as a result of being absent.

The Marquette University Student Health Service does not provide documentation of illness, or of a visit to the Student Health Service. Likewise, college and other university offices (e.g., Office of the Dean, Counseling Center and Student Affairs) do not provide documentation of an absence on behalf of the student. When an extended absence of a week or more is expected or occurs, the student, or a family member if the student is unable, should communicate with the college office as soon as possible, after which the college office may notify faculty and others, as appropriate.

Regardless of the reason for the absence, students are responsible for learning what happened in class. Students who anticipate missing one or more class periods should contact the instructor ahead of time, just as they should contact their instructor as soon as possible after an absence. Students are responsible for monitoring their absences during the term.

Since attendance is taken at the discretion of the faculty member, the following distinction is made for withdrawals that occur in courses where attendance is regularly taken, and withdrawals that occur in courses where attendance is not regularly taken:

1. For courses in which attendance is regularly taken, an instructor or college office may withdraw a student from a course due to excessive absences and assign a grade of WA (Withdrawn-Excessive Absences). In these cases, instructors must document the dates of absenteeism.



Such action may be initiated, for example, in a 16-week course when the number of class hours missed exceeds twice the number of course credits. As such, a student may be assigned the grade of WA when more than 6 classes have been missed in a 3 credit course, when more than 8 classes have been missed in a 4 credit course and when more than 10 classes have been missed in a 5 credit course.

As examples: students who miss more than 6 classes in a 3 credit course that meets 50 minutes, 3 times per week, will be considered to have excessive absences and may be assigned a WA. Likewise, students who miss more than 4 classes in a 3 credit course that meets 75 minutes, 2 times per week, will be considered to have excessive absences and may be assigned a WA.

Students assume all consequences that ensue as a result of receiving a WA grade. These consequences include, but are not limited to: a delay in graduation, loss of eligibility for certain scholarships or financial aid, loss of full-time student status.

2. For those courses in which attendance is not taken on a regular basis, an instructor or college office may withdraw a student when it becomes apparent that the student has excessive absences. In such cases, a student's last date of attendance is determined by the last date of participation in an academically-related activity for the course including, but not limited to: an exam or quiz, a submitted assignment, participation in a lab activity, or in computer-assisted instruction.

## Online Courses and Attendance

Online courses at Marquette University are designed to be highly interactive and collaborative, as authentic learning takes place within a social context. To help ensure an effective learning experience, all students in online courses are expected to participate on a regular basis. Participation is defined as "submitting required work as assigned; being an active contributor and responder to fellow students and the instructor in a timely basis, as set forth by online discussion guidelines in each course." Failure to participate may be counted as an absence. If technical circumstances prevent a student from entering the course site for a period of time, it is the student's responsibility to contact the instructor in a timely manner if the student wishes to receive credit for any missed online activities.

The above two sections represent university attendance standards. Each undergraduate college may enforce additional attendance policies for certain courses; please consult your college handbook, college section of the current bulletin, or the individual course syllabus/attendance policy for more information.

## Absences Related to Legal Obligations or University Activities

Students who fulfill a legal obligation such as jury duty, or participate in an officially sanctioned university activity, should be given the opportunity to make up class examinations or other graded assignments that are missed as a result of this participation or related travel.

It is recognized that sometimes an exam or graded assignment is impossible to make up. Some faculty may assign collaborative projects that depend on other classmates, or oral presentations that incorporate questioning by the entire class, or may use evaluative methods that cannot easily be replicated by the instructor. This policy does not prohibit any member of the faculty from making the determination that certain course work cannot be made up. Faculty who intend to deny the opportunity to make up certain exams or projects because of absences resulting from legal obligations or university sanctioned activities and related travel, must inform the student of these consequences (reduced grade or otherwise) in writing, at the beginning of the class (preferably in the course syllabus).

Other than the above situations, examinations or other assignments missed as a result of legal obligations or university sanctioned activities and related travel, may be made up. The manner in which the work will be made up is left to the discretion of each individual faculty member.

In order to minimize the difficulties for both students and instructors caused by absences due to legal obligations, or university sanctioned activities and related travel:

1. Students should:

Make every effort to schedule classes that will minimize conflicts caused by these activities and related travel.

Provide a schedule of all activities and related travel to all their instructors within the first week of each semester, or as soon as possible for non-scheduled events.

Obtain any class notes or other course material missed due to these absences, prior to taking any subsequent examinations or submitting any subsequent graded assignments.

Make arrangements with the instructor to make up any missed work, prior to any of these absences.

2. Faculty should:

Develop with the student, an agreed upon and mutually acceptable resolution as to how missed classroom activities and missed work will be handled as a result of these activities, if make-up work is allowed in the faculty policy.

The above section represents university standards for absences due to legal obligations and university sanctioned activities and related travel; each undergraduate college may have additional requirements for students enrolling in its courses.

## Audit

Students who wish to audit courses without earning credit must present evidence of their preparation for the course or courses in which they wish to enroll. Auditors are required to attend all classes but are not required to complete written course assignments or examinations.

Students must first register for the course via CheckMarq, then request the audit option from the student's college office with the Audit Request form located at Marquette Central (<http://www.marquette.edu/mucentral>). This form is used through the end of registration for each session, as published on the University Academic Calendar. After the end of registration for each session, students must contact their college office to request the audit option. The deadline to request the audit option for each session is listed on the University Academic Calendar.

A 50 percent discount on tuition (only) is available to individuals who audit classes. This opportunity is offered to students who have the proper background and prerequisite of the course(s) in question. A student whose total credit hours equal 12 or more including audit courses, will be assessed the full-time rate based on their career. This discount is not available to individuals who take the senior citizen discount.

## Classification

An undergraduate student must have earned 24 credit hours before being classified as a sophomore; 60 hours before being classified as a junior and 92 hours before being classified as a senior.



## Commencement

Commencement at Marquette is a symbolic ceremony provided for students, faculty and families in celebration of our students' accomplishments. Following is the policy regulating participation in the Spring or Winter Commencement.

1. Students may participate in only one university commencement ceremony per degree and their names will be published in only the commencement program in which they participated.

2. Spring Commencement:

- Students who are in good academic standing, have met the appropriate graduation application deadline and will complete their degree requirements, including the official recording of any transfer work, by the end of the Spring term will participate in Spring Commencement.
- Students, who are in good academic standing, have met the appropriate graduation application deadline and will complete their degree requirements, including the official recording of any transfer work, by the end of the Summer term and are pre-registered for those final requirements may participate in Spring Commencement. (Ph.D. candidates — see #4 below)

3. Winter Commencement:

- Students who are in good academic standing, have met the appropriate graduation application deadline and will complete their degree requirements, including the official recording of any transfer work by the end of the Fall term will participate in Winter Commencement.
- Students who completed their degree requirements in August and did not participate in Spring Commencement, will participate in Winter Commencement.

4. Ph.D. Candidates:

To participate in Spring or Winter Commencement, Ph.D. candidates must have met the appropriate graduation application deadline, successfully defended their dissertation, received approval by their Dissertation Committee for any required revisions, and received approval of the dissertation format by the Graduate School before the published deadline for the respective commencement.

5. Students who participate in commencement without completion of their degree requirements will have their names published in the commencement program with a notation indicating the expected term of completion; however, these students will not have any graduation honors noted. (Ph.D. candidates — see #4 above)

6. Degree conferral is certified by the official Marquette transcript noting the degree completion. Receipt of a diploma or participation in the commencement ceremony does not constitute certification of degree conferral.

7. Any exceptions to this policy must be approved by the provost.

## Course Levels

Lower-division courses are numbered 1000-2999 and normally are taken by freshmen and sophomores. Upper-division courses are numbered 3000-4999 and normally are taken by juniors and seniors. Students must earn a minimum of 32 Marquette upper-division credits in order to earn a degree at Marquette.

## Credit

The semester hour is the unit of academic credit used by Marquette University. One semester hour of credit is awarded for 50 minutes of lecture per week for a 16-week course; credit for laboratory hours is appropriately awarded. Semester hour credit is given only in accordance with descriptions for individual courses as published in the Undergraduate Bulletin. No credit is given for a course in which a student has not registered.

The normal schedule for full-time undergraduate students is 16 or 17 credit hours, with the exception of students in the ROTC programs, which necessitates carrying more credits due to special requirements of the programs. An upperclassman may be allowed, with the consent of the dean or director, to carry more than the normal load, provided that, in the preceding term, all his/her grades were B or higher. Part-time Studies students are ordinarily limited to a maximum of nine credit hours.

Credit for courses pursued at another educational institution while simultaneously enrolled at Marquette (concurrent registration) will not be allowed unless specifically authorized by the dean. See "Study at Other Institutions" in this section of the Undergraduate Bulletin.

## Credit by Marquette Examination

Marquette recognizes that students by virtue of independent study, previous training or experience may already possess mastery of the content of a particular course in which they have not been formally registered. To enable students to enrich or accelerate their course of study, the university provides for the establishment of academic credit by means of a special Marquette examination. This credit is granted only to degree-seeking matriculated students who earn a C or better on the exam and is the equivalent of the credit the student would have earned had he or she actually been enrolled in the course at Marquette and successfully completed it. Students wishing to establish credit by Marquette examination should submit a request for such examination to the office of their dean or director.

## Enrollment Status

The undergraduate enrollment status is based on enrolled credit hours each semester. A full-time enrollment status means a student is enrolled in a minimum of 12 credits; a half-time academic load means a student is enrolled in 6-11 credits; enrollment in fewer than 6 credits is considered less than half-time status for the student.

## Examinations (Midterm and Final)

### Midterm Assessment

The university requires that midterm grades be assigned to students in most undergraduate courses and that these grades be based on appropriate written evidence of achievement. Midterm grades are assigned mid-way through the fall and spring term, as per the deadline in the University Academic Calendar. The undergraduate courses in which faculty have the option to assign a midterm grade are these: Exchange; Marquette-Led Study Abroad; Workshop/Institute/Studio; Practicum/Clinical/Field Experience/Student Teaching; Internship/Externship; Independent Study/Research; Senior Capstone; Senior Project; Senior Thesis. If midterm grades will be assigned in these courses, the instructor will include this information in his/her syllabus distributed at the beginning of the term.

## Final Exams

Final examinations are held in most subjects. A student's achievement in each of his or her subjects, expressed as a letter grade, is based on the combined results of class work and examinations.

Should a student have more than three final examinations scheduled on one day, and these examinations are not in the form of a team project presentation, a take-home examination or a final paper, he/she has the option to reschedule one of those final examinations. The student must contact his/her college office prior to examination week to reschedule an examination. The decision as to which examination will be rescheduled is at the discretion of the college.

A student who misses a final examination risks receiving an F grade for the course. Students are held to the standard, as outlined in the instructor's attendance policy, which is distributed at the beginning of each term.

## Faculty Grading

All grades are entered by the primary instructor of the course into CheckMarq by the grading deadline for each session, as published in the University Academic Calendar. While other approved personnel of the university may assist the faculty in grade submission on the university's course management system (D2L); only the primary instructor may enter and approve the grades in CheckMarq.

## Family Education Rights and Privacy Act (FERPA)

In compliance with the Family Educational Rights and Privacy Act, Marquette University notifies its students each term of their rights to inspect, amend and prevent disclosure of their education records. In addition, Marquette's policy regarding education records is printed in the university student handbook and copies may be obtained from the Office of Student Development in the Alumni Memorial Union, 329, or online. ([http://www.marquette.edu/mucentral/registrar/policy\\_ferpa.shtml](http://www.marquette.edu/mucentral/registrar/policy_ferpa.shtml))

## Placement in Foreign Language Courses

Students in the Klingler College of Arts and Sciences, international business majors in the College of Business Administration, College of Education and speech pathology and audiology majors in the College of Health Sciences must satisfy a foreign language requirement for graduation. This may be accomplished by placement, course work or both. The goal of the Department of Foreign Languages and Literatures is to place students in the most appropriate level of foreign language study based on their previous exposure to the language.

## Foreign Language Requirement

The following procedures have been established by the Department of Foreign Languages and Literatures for placement in foreign language courses:

1. Students who have never studied the language, or who are beginning the study of a new language, do not have to take a placement examination. They should register for an Elementary Language course numbered 1001.
2. Students who have earned high school credit in French, German, or Spanish, and who plan to continue with the study of that language must take the WebCAPE Placement Examination to determine placement in the appropriate course.

3. Students who place in SPAN 1001 Elementary Spanish 1, but have studied two or more years of the language at the high school level, must register for the SPAN 1003 Intensive Elementary Spanish, if they plan to continue study in that language. SPAN 1001 Elementary Spanish 1 is limited to new language learners or those who have studied the language less than two years.
4. Students who have completed two years or less of Arabic, Chinese, Classical Greek, Latin, Italian or Japanese in high school, and who plan to continue with the study of that language should register for an Elementary Language course numbered 1001. Students with three years or more of high school study should register for an Intermediate Language course numbered 2001. Students should consult with the Department of Foreign Languages and Literatures if they have any questions regarding the placement in these levels.
5. Students who are native or near-native speakers of Arabic, Chinese, French, German, Italian, Japanese and Spanish are not eligible to register in the elementary or intermediate levels of their native language for credit. Registration in these courses may result in no credit being awarded for the course. Students should consult with the Department of Foreign Languages and Literatures regarding the appropriate level for which to register.
6. Students who are native or near-native speakers of French, German or Spanish, and who plan to continue advanced study of that language must first take the WebCAPE Placement Exam in that language to determine the level of proficiency. After taking the exam, students must consult with the Department of Foreign Languages and Literatures before registering for an advanced foreign language course. Native speakers of other languages should consult with the records office in their college regarding possible exemption from the foreign language requirement.
7. Students who have spent six weeks or more studying in a French, German or Spanish-speaking country must take the WebCAPE Placement Examination, and consult with the Department of Foreign Languages and Literatures before registering for a foreign language course.
8. Students who have college credit for a foreign language course from another university (including CAPP courses in high school) must have their transcripts sent to the Office of Undergraduate Admissions and should consult with the Registrar and their College office regarding the transfer of foreign language credit, and the Department of Foreign Languages and Literatures before registering for a foreign language course. Students with college credit should not take the WebCAPE Placement Examination since placement will be determined by the college credit transferred.
9. Students who have taken the Advanced Placement Exam or the International Baccalaureate Exam and have received credit for a course in a foreign language or literature should refer to the Department of Foreign Languages and Literatures' website (<http://www.marquette.edu/fola>) for recommendations on the appropriate course for which to register.

The Department of Foreign Languages and Literatures will review the results of the placement examination in conjunction with other information, such as number of years that the language was studied, grades earned, etc. The department reserves the right to change the student's placement in a course if it believes that the student has not been placed at the appropriate level, or in the most appropriate course based on the student's exposure to the language. Students who believe they were misplaced on the basis of the placement test score should consult the Department of Foreign Languages and Literatures. Students may not place themselves, or change their placement without departmental approval. Registration in a course lower than the approved level may result in no credit being awarded for the course.

Further information on the procedures and instructions regarding the WebCAPE Placement Examination can be found on the Department of Foreign Languages and Literatures' website (<http://www.marquette.edu/fola>).

## **Placement Credit in Foreign Languages**

Students who enter Marquette University who have studied or have had previous exposure to French, German, Classical Greek, Italian, Japanese, Latin or Spanish, and who plan to continue the study

of that language must follow the placement procedures established by the Department of Foreign Languages and Literatures. They may be eligible to apply for three to six hours of special placement credit dependent upon the level in which they are placed, and the completion of that course with a grade of B or better (plus earn credit for the course in which they are enrolled).

For example: if a student places in an Intensive Intermediate course in French, German or Spanish numbered 2003 and completes the course with a grade of B or better, he or she may be eligible to apply for three hours of special placement credit (plus earn four credits for course 2003). If a student places in a French, German or Spanish course numbered 3001 and completes the course with a grade of B or better, he or she may be eligible to apply for six hours of special placement credit (plus earn three credits for the course in which the student is enrolled).

The grade awarded for the special placement credit will be an S (Satisfactory) which will be noted on the student's transcript. These credits will only count toward the total hours needed for graduation from Marquette, and cannot be used toward the completion of a major or minor in the language. Such special placement credit is not automatic. It is the student's responsibility to complete an Application for Placement Credit in Foreign Languages form in his or her first language course at Marquette. If the student is awarded the special placement credits, they will be noted on his or her transcript at the end of the semester after the course was completed.

#### Eligibility Requirements for Special Placement Credit:

1. The student must have earned the high school credits for the language in question from a U.S. high school.
2. The student may not be a native speaker or equivalent of the language, nor have resided in a country where the language is spoken for more than six months.
3. The student may not have college credit in the language (including Advanced Placement (AP) credit, credit by examination, or transfer credit from another institution).
4. The student may not have previously audited a college course in the language or enrolled in, and then withdrawn from, a course in the language after the third week of the term.

## Grade Appeals

Undergraduate students may appeal any final course grade that the student believes to be in significant violation of clearly established written policies, a result of improper procedures or discriminatory. Before initiating a formal grade appeal, the student must consult with the instructor assigning the grade and present evidence why the student believes the grade to be in error. If this does not lead to resolution, the student may initiate, in writing, a formal grade appeal. To be considered, the written appeal must be submitted no later than the final day officially scheduled for the removal of incompletes, approximately four weeks after the beginning of the academic semester immediately following the term in which the grade was assigned. However, it may be in the student's best interest to appeal sooner than this deadline if his/her academic progress is dependent on the outcome of the appeal. In addition, the student should consult with the college or school offering the course for which the grade is being appealed to determine if other requirements for the written appeal are in force.

The written appeal must be submitted to the chair of the department offering the course or, in schools or colleges with no departmental structure, to the associate dean. The written appeal must provide the reason(s) the student believes the recorded grade is incorrect. The student may present evidence of his/her performance and may also request that all other pertinent materials be supplied by the instructor. The chair, or associate dean, will collect and analyze the evidence in a timely manner. Evidence will be gathered through consultations with the instructor, the student and any witnesses. These consultations may be in person, by phone or by electronic means. Hard copies of relevant documents may also be requested. The chair, or associate dean, will evaluate the appeal or choose to designate an ad hoc committee for this purpose. The chair, associate dean, or ad hoc committee will consider the appeal and evidence and make one of the following decisions: the assigned grade should remain, the course instructor is asked to reconsider the grade in light of information collected and the reconsidered grade will stand, or a grade change is warranted. The decision will be communicated in

writing within 30 days to the student and the instructor with copies of the formal response placed in the student's file and forwarded to the dean and any indicated grade changes filed with the registrar.

The student has the right to appeal the decision of the chair, associate dean, or ad hoc committee, to the dean. This appeal must be submitted in writing no later than 14 days from the date of the formal response. The dean will review the procedural evidence, which now includes all the evidence previously gathered, the student's appeal letters and the formal response from the chair, associate dean or ad hoc committee, and will render the final decision on the grade appeal. The decision will be communicated in writing within 30 days to the student and the instructor with copies of the formal response placed in the student's file and any indicated grade changes filed with the registrar.

## Grading System

Marquette uses the grade point system to determine a student's academic average and his/her eligibility to graduate (see Graduation Requirements section of this bulletin.) Each grade (A through F) earned in a course carries a specified number of grade points. The grade points earned in any given course equal the grade point value of the grade multiplied by the total number of semester hours credited. A student's grade point average is found by dividing the total number of grade points earned by the total number of semester hours credited in those courses for which grade points have been assigned.

All students must earn at least a C (or 2.000) average in courses taken at Marquette. If a student's grade point average falls below 2.000, or if the student has accumulated excessive hours of failure, he/she will be given a scholastic censure or may be required to withdraw. (See Academic Probation and Dismissal (Scholastic Censure) in this section of the Undergraduate Bulletin).

The following letter grades, their equivalents in achievement, and grade points per credit hour are used by Marquette instructors to evaluate a student's performance in a course:

| Grade | Achievement      | Grade Points |
|-------|------------------|--------------|
| A     | Superior         | 4.0          |
| AB    |                  | 3.5          |
| B     | Good             | 3.0          |
| BC    | *                | 2.5          |
| C     | *Satisfactory    | 2.0          |
| CD    | *                | 1.5          |
| D     | *Minimum Passing | 1.0          |
| F     | Failing          | 0.0          |

\* Considered a passing grade, unless otherwise specified in the degree requirements of the college, as outlined in the college sections of this bulletin.

Former students who are applying for readmission should consult their respective deans for information concerning the application of any new grading policy to their earlier academic records.

The following letter grades do not have associated grade points:



| Grade | Circumstance  |
|-------|---|
| ADW   | Administrative Withdrawal; student was withdrawn from the course for administrative reasons, as determined by the university via a dean's decision, a formal hearing and/or an appeal process.  |
| AU    | Audit   |
| CR    | Credit; equivalent of C work or better.   |
| I     | Incomplete; assigned on a pre-arranged basis, to allow completion of course assignments other than the final examination; the student's performance in the course must merit this exception otherwise, the instructor will assign either a grade of F, or a passing grade that reflects both the quality of the work completed and the significance of the work which has not been completed.           |
| IC    | Course Incomplete; assigned to all students enrolled in a course, clinical, independent study/research, capstone, etc. that will not be completed by the grading deadline for the term in which the course is scheduled; changed to a letter grade by the faculty at the time of completion (no initiation needed by the student); permanent grade must be assigned within one year after IC is posted. |
| IE    | Incomplete Extension; assigned by the college office to those students who are granted an extension to the deadline for removal of an I, IX or X grade.   |
| IX    | Incomplete course work and final exam not taken; assigned to a student who has incomplete course work and is absent from the final examination; must meet the criteria for both the I grade and the X grade; a student not qualifying for the IX will be assigned the grade of F.   |
| NC    | No Credit; equivalent of less than C work.  |
| SNC   | Satisfactory completion in a course bearing no credit; mandatory grade for all zero credit bearing courses.   |
| UNC   | Unsatisfactory completion in a course bearing no credit; mandatory grade for all zero credit bearing courses.   |
| S     | Satisfactory completion in a credit bearing competency-based course; equivalent of C work or better.  |
| SY    | A permanent grade indicating satisfactory work completed in the first term of a series of year-long courses, where grades are assigned only in the final course in the series.  |
| U     | Unsatisfactory completion of a credit bearing, competency-based course; equivalent of less than C work.   |
| UW    | Unexcused withdrawal; withdrawal initiated by the faculty or college office when a student registered for a course, never attended and failed to officially withdraw.   |
| UY    | A permanent grade indicating unsatisfactory work completed in the first term of a series of year-long courses, where grades are assigned only in the final course in the series.  |
| W     | Official withdrawal; withdrawal initiated by the student, with approval of the college office.  |
| WA    | Withdrawn-Excessive Absences; withdrawal initiated by the faculty or college office due to excessive absences in the course or student is found to be in violation of the   |

|   |   |
|---|---|
|   | Undergraduate Attendance Policy section of this bulletin; once assigned, the WA grade cannot be overwritten by a W grade.   |
| X | Completed course work and final exam not taken; assigned to a student who is absent from the final examination and who might earn a passing grade in the course were he/she to take a delayed examination; both conditions must exist, or the student is assigned the grade of F. |

## Clarifications of Grades

### ADW Grade

Any student who is administratively withdrawn from the university will receive this grade in all courses and must be readmitted to the university before enrolling in a subsequent term. Administrative withdrawal is an action normally taken by the university for disciplinary, lack of professional competence or academic reasons other than low grades or lack of degree progress. This grade is assigned by the college office, or depending on the reason for the administrative withdrawal, the student affairs division, and will take precedence over the W, WA or UW grade, should the student withdraw or be withdrawn from a course after the faculty or other university personnel initiated the administrative action which ultimately results in this grade.

### CD and D Grades

The policy on CD and D grades earned in courses taken at Marquette University differs for students in the various colleges, schools and programs. See the pertinent sections of this bulletin for statements of individual policy.

### CR/NC Option (formerly S/U)

For enrichment purposes, junior and senior students are given an option to elect one course per term (to a maximum of four courses) for which only a CR or NC grade is assigned. This course must be a true elective in the individual's program, the prerequisites for which the student has met. Courses excluded are those taken in fulfillment of the requirements for the Core of Common Studies, courses for the major or minor including teacher certification and the like or special courses excluded by the individual colleges, schools or programs. Arrangements to take a course under the CR/NC option must be made no later than the end of registration by completing the appropriate form available online at Marquette Central ([http://www.marquette.edu/mucentral/registrar/policy\\_forms.shtml](http://www.marquette.edu/mucentral/registrar/policy_forms.shtml)).

After the end of registration, the student does not have the option of changing from CR/NC to regular grading or from regular grading to the CR/NC option.

### I, IE, IX and X Grades

The grades of I, IE, IX and X are cleared through the college office of the college offering the course. These grades must be cleared by the date specified in the academic calendar or they will automatically become the grade of F. The IE grade must be cleared by the date of the extension or it will become the grade of F. For those continuing students who entered under the previous grading policy, the I, X and IX grades will remain on the permanent record. Because these grades denote that the student did not fulfill all course requirements, the university views these grades with the same seriousness as the grade of F.



# Graduation

## Graduation Requirements

Normally undergraduate students must meet the graduation requirements which are stated in the Undergraduate Bulletin issued for the year in which they entered Marquette. Substitutions or waivers for specific courses required for degree completion may occur, as determined by the college. It is to be expected that these course exceptions will occur in the case of any student whose enrollment period extends for more than eight years. Students whose enrollment is interrupted for two or more consecutive terms normally must meet the requirements in the bulletin issued for the year in which they return to the university. The college may determine that a readmitted student will fall under a different set of degree requirements than the academic year in which he/she is readmitted. Students are responsible for keeping themselves informed of the requirements which apply in their particular cases.

Every student has available faculty advisers who will assist in planning and implementing the student's plan of studies; however, it is ultimately each student's responsibility to know and fulfill the requirements for graduation specified for the selected plan.

A candidate for a baccalaureate degree must meet the following graduation requirements:

1. In all colleges and programs a minimum grade point average of 2.000 must be earned for graduation.
2. The candidate for a degree in the College of Arts and Sciences or the College of Communication must earn 128 credit hours and a minimum of 256 grade points (2.000 grade point average). In addition, an arts and sciences candidate must achieve a 2.000 grade point average in all courses in his/her major or minor.

In the College of Business Administration (non-accounting), 128 credit hours (includes four one-credit S/U courses) and 256 grade points (2.000 grade point average) are required. In addition, a candidate must achieve a 2.000 grade point average in all courses in the College of Business Administration. A candidate majoring in accounting must earn 128 credit hours with a 2.500 average in all courses in the College of Business Administration. At least 50 percent of the required business credits must be taken at Marquette University.

In the College of Education, students must have a minimum of a 2.750 overall grade point average and a minimum of a 2.750 grade point average in major courses, each additional area of licensure and in education course work.

In the College of Engineering, 130 to 135 semester hours (depending upon which major is chosen) and a 2.000 grade point average must be earned in Marquette and transfer credits accepted. In addition, there must be a 2.000 average in all engineering course work.

In the College of Health Sciences, all health sciences candidates must achieve a 2.000 grade point average in all courses of his/her major. In addition, the candidate for a bachelor of science degree with a major in athletic training, biomedical sciences, clinical laboratory science, exercise science or speech pathology and audiology must earn 128 credits hours and with the following minimum cumulative grade point average: athletic training 2.750; biomedical sciences 2.000; clinical laboratory science 2.200; exercise science 2.600; speech pathology and audiology 2.000. The master in physician assistant studies degree requires 128 credits with a 2.800 cumulative grade point average and the doctor in physical therapy degree requires 126 credits with a minimum 2.200 cumulative grade point average.

In the College of Nursing, 128 credit hours and a minimum of 256 grade points (2.000 grade point average) are required.

In the College of Professional Studies, 126 credit hours and 252 grade points (2.000 grade point average) are required.

3. A minimum of 60 Marquette credits are required to earn a Marquette undergraduate degree. In the College of Professional Studies, students must earn a minimum of 45 Marquette credits.
4. For students admitted in Summer 2010 or beyond, the final 30 credits needed to complete a Marquette undergraduate degree must be earned as Marquette credits, unless those credits are earned in an approved study abroad program; for students admitted prior to Summer 2010, 30 of the final 36 requirements needed to complete a Marquette undergraduate degree must be Marquette credits, unless these credits are earned in an approved study abroad program.
5. A minimum of 32 upper-division Marquette credits are required to earn a Marquette undergraduate degree.
6. A minimum of 15 Marquette credits in the major are required to earn a Marquette undergraduate degree.
7. The student must attend any course of lectures, or any other exercises which have been or may be required, even though such courses receive no recognition in terms of credit hours.
8. The student must file a formal application for a degree at the college office.
9. May graduates must attend Commencement exercises. Permission to be absent may be requested only for serious reasons by writing to the dean of the student's college by May 1.
10. All exceptions to this Graduation Requirements policy must be approved by the Office of the Provost, except:
  - a) the course and bulletin year exceptions listed in paragraph 1;
  - b) numbers 7 and 8 above.

## **Graduation Honors**

The grade point system is used to compute graduation honors. The computation is made by dividing the total number of grade points earned at Marquette University by the total number of grade point hours earned. To graduate with honors, a candidate must have earned at least 60 grade point hours and 60 degree hours at Marquette University, normally as a junior and senior.

A candidate whose average is 3.500 graduates cum laude; one whose average is 3.700 magna cum laude; and one whose average is 3.900 summa cum laude. Graduation honors are recorded on diplomas, noted in the published lists of graduates at Commencement and recorded on the student's transcript.

## **Major Declaration**

Students officially declare a major by means of the application for admission when they matriculate to the university in the Colleges of Communication, Education, Health Sciences, Nursing and Professional Studies. Students in the colleges of Arts and Sciences, Business Administration and Engineering must officially declare a major before their junior year in the college and/or academic department that offers the desired major. All students who enter the university as an undeclared major, must officially declare a major within their college and/or academic department before their junior year. All students who wish to change a major, must do so by following the procedures in place in the college they currently reside and in the college and/or academic department that offers the desired major. No major may be declared that is not in active status at the time of the declaration and upon declaration of the major, the student normally would be required to follow the current curriculum requirements in place at the time of the declaration, rather than those in effect at the time of admission.

## Minor Declaration

Students officially declare or change a minor after enrolling in the university by means of a Minor Request/Update form that is submitted to their home college. The form is located online. (<http://www.marquette.edu/mucentral/registrar/documents/Form-UndergraduateMinorRequestUpdate.pdf>) In order to receive appropriate advising and complete the requirements, the minor should be declared by the junior year. No minor may be declared that is not in active status at the time of the declaration and upon declaration of the minor, the student normally would be required to follow the current curriculum requirements in place at the time of the declaration, rather than those in effect at the time of admission.

## Medical Withdrawal

### Purpose

An official medical withdrawal may be needed when, in extraordinary cases, a student's physical and/or psychological condition interferes with that student's ability to participate in campus life, including the ability to complete or make satisfactory progress toward academic goals. Upon request, an official medical withdrawal may be granted, or in some cases, required by the university, as referenced in the Student Handbook, or other university, college or school policies. Note: a student may withdraw from a term for various reasons, including medical; however, if the student wishes to be verified by the university as having withdrawn with an official medical withdrawal, this policy and the processes outlined below then applies.

### Process

A student who chooses to withdraw and requires documentation of the withdrawal for health insurance or other purposes, must complete the appropriate Medical Withdrawal form found here: [mu.edu/mucentral/registrar/policy\\_forms.shtml](http://mu.edu/mucentral/registrar/policy_forms.shtml) ([http://www.mu.edu/mucentral/registrar/policy\\_forms.shtml](http://www.mu.edu/mucentral/registrar/policy_forms.shtml)). This form must be submitted before or within the term of illness/injury and by the deadline to withdraw from the session/term, as published in the University Academic Calendars ([mu.edu/mucentral/registrar/cal\\_index.shtml](http://mu.edu/mucentral/registrar/cal_index.shtml)) ([http://www.mu.edu/mucentral/registrar/cal\\_index.shtml](http://www.mu.edu/mucentral/registrar/cal_index.shtml)). If the student is unable to participate in the medical withdrawal process and an official medical withdrawal is needed, the student's college/school office, parent, spouse, partner, or other designee may do so on behalf of the student, once the incapacitation of the student is documented or power of attorney is provided. The Office of Student Affairs may, at times, require a student's medical withdrawal on an involuntary basis. In this case, that office will process the Medical Withdrawal form on behalf of the student. In either case, voluntary or involuntary withdrawal, the university will not grant retroactive official medical withdrawals of any kind for previous terms/sessions. In addition, all previously graded courses at the time of the request will remain on the student's record, regardless of the term/session in which the courses were taken.

A student who withdraws, or is withdrawn, for medical reasons prior to the end of late registration will have no courses reflected on the academic record for the term of the withdrawal. A student who withdraws, or is withdrawn, for medical reasons after the end of late registration will receive final grades of 'W' in all courses for the term of the withdrawal, except when courses have already been graded, or when grades of 'ADW' (administrative withdrawal) are warranted.

The completed 'Medical Withdrawal Request' form is to be submitted in person to Marquette Central or mailed to the Office of the Registrar by the student, the student's designee, the student's college/school office, or the Office of Student Affairs, and must include all relevant documentation as described on the form. The form and all documentation will be confidentially forwarded to the Medical Withdrawal Committee (MWC) for action.

The Medical Withdrawal Committee is comprised of four to five members. Permanent members include representatives from the Counseling Center, the Office of Student Financial Aid and the Office of the Registrar. Additional representatives will be included as follows: a designated representative from the Committee on Academic Procedures (for undergraduate student requests); a designated representative

from the Graduate School (for graduate student requests); a designated representative from the Graduate School of Management (for GSM student requests); designated representative from the College of Health Sciences (for Health Sciences Professional or pre-professional student requests). The Medical Withdrawal Committee reserves the right to consult with individuals from the student's college/school office, Counseling Center and/or Student Health Services on a case-by-case basis. The Medical Withdrawal Committee will carefully review each request for medical withdrawal and determine the action to be taken, including any refund, if appropriate. A medical withdrawal determination will result in a registration hold placed on the student's record.

A student has the right to appeal the Medical Withdrawal Committee's determination by writing to the Office of Student Affairs within five business days of the Committee's decision. The refund decision, if any, may not be appealed on its own, but will be considered as part of an appeal of the withdrawal decision. The Office of Student Affairs will, in turn, consult with the student's college/school office, or other university offices if appropriate, and reply to the student within five business days. The determination of the Office of Student Affairs is final.

Once a final determination has been made, the form will be signed by the chair of the committee and forwarded to the Office of the Registrar. The Office of the Registrar will then notify the student's college/school office and other offices, as appropriate; process the withdrawal; add the registration hold; and apply any refund, if granted. The original signed form will be retained by the Office of the Registrar as part of the permanent academic record.

Because a medical withdrawal can affect so many aspects of academic progress at Marquette, the student is encouraged to first consider other options that might enable the student to remain enrolled. Before requesting a medical withdrawal, a discussion with the student's college/school office, the Office of Student Financial Aid (if applicable), the Office of International Education (if applicable) and other offices, as appropriate, is highly encouraged (e.g., Veterans, ROTC). It is also recommended that each student discuss the ramifications of a withdrawal with his/her health insurance or other service providers.

### **Readmission after Medical Withdrawal: Immediate Subsequent Term**

1. A student who withdraws prior to the end of registration, such that no courses appear on the academic record for the term of withdrawal, must apply for readmission to the university in order to attend any subsequent term.
2. A student who withdraws after the end of late registration and has already earned grades, or receives grades of 'W' and/or 'ADW' in the term of withdrawal, is not required to apply for readmission to the university for the immediate subsequent term.

Approval to return to the university following a medical withdrawal is not guaranteed. The review process will follow all of the regulations outlined in the university readmission policy, in addition to any additional requirements imposed at the time of the medical withdrawal. The Medical Withdrawal Committee must approve a student's return to the university and the student's college/school must subsequently approve readmission to the college/school (if applicable). The registration hold imposed at the time of the medical withdrawal will not be removed from the record until the student is readmitted by the college/school (as applicable) and/or approved to return to the university by the Medical Withdrawal Committee.

Because of the documentation required, and the various decisions that must be made by university officials, it is necessary that the process to return, as outlined above, begin well in advance of the term/session in which the student wishes to re-enroll. At a minimum, the completed readmission application (if applicable), the 'Request to Return After a Medical Withdrawal' form and all required documentation must be submitted no later than two weeks prior to the start of the session/term in which the student desires to return to the university. Failure to meet the two-week deadline may result in deferment of readmission to the following term/session.

## Readmission after Medical Withdrawal: Future Terms

1. A student who withdraws prior to the end of registration, such that no courses appear on the academic record for the term of withdrawal, must apply for readmission to the university in order to attend any subsequent term.
2. A student who withdraws after the end of late registration, has already earned grades or receives grades of 'W' and/or 'ADW' in the term of withdrawal and who does not enroll in the immediate subsequent term, must apply for readmission to the university.

Approval to return to the university following a medical withdrawal is not guaranteed. The review process will follow all of the regulations outlined in the university readmission policy, in addition to any additional requirements imposed at the time of the medical withdrawal. The Medical Withdrawal Committee must approve a student's return to the university and the student's college/school must subsequently approve readmission to the college/school. The registration hold imposed at the time of the medical withdrawal will not be removed from the record until the student is readmitted by the college/school, and/or approved to return to the university by the Medical Withdrawal Committee.

Because of the documentation required, and the various decisions that must be made by university officials, it is necessary that the process to return, as outlined above, begin well in advance of the term/session in which the student wishes to re-enroll. At a minimum, the completed readmission application, the 'Request to Return After a Medical Withdrawal' form and all required documentation must be submitted no later than two weeks prior to the start of the session/term in which the student desires to return to the university. Failure to meet the two-week deadline may result in deferment of the readmission decision to the following term/session.

## Non-degree Students

1. Non-degree students may register for a maximum of seven credits each term. Written authorization from the student's dean/director must be acquired for exception to this policy. When requesting an exception, non-degree students may be required to present transcripts and other documents for evaluation.
2. Ordinarily, non-degree students may accumulate a maximum of 24 credits at Marquette. Authorization from the student's college dean is required before students may exceed this limit. However, twenty-four credit hours earned at Marquette University on non-degree status is the maximum that may be applied toward a degree in all disciplines with the exception of nursing, in which only 12 credit hours may be applied.
3. Non-degree students are expected to maintain satisfactory academic progress at Marquette University. The student's progress in these areas is monitored regularly by the office of the dean/director. The university's policy and procedures governing scholastic censure outlined in this bulletin apply to non-degree students and are exercised as necessary by the colleges.
4. Non-degree students who wish to become degree seeking, must apply via the Undergraduate Office of Admissions and are held to all of the requirements outlined in the Admission and Readmission to the University (p. 16) section of this bulletin.
5. Normally, students who are accepted and enroll with non-degree status must complete at least 12 credits before applying for degree status.
6. A 2.000 grade point average in Marquette University course work is a minimum requirement to be considered for degree status.



## Official Transcripts

The Office of the Registrar (OTR) accepts only official transcripts for the purposes of posting transfer credit or courses to the Marquette record and/or verification of a degree, diploma or certificate completion at another institution. Official transcripts are those that are printed on security paper and come directly via U.S. Mail from another institution's record/registrar office to the OTR or are delivered electronically directly to the OTR via a secured third party method that has been verified by the sending institution. All other transcripts are considered unofficial and will not be accepted or processed. Once an official transcript is received by the OTR, the transcript will be submitted for review to the college office of the primary degree/major of the student and the college will determine which courses and/or credits are transferable to Marquette.

## Registration

Normally, advising is required for all students prior to registration each term. Students who register for course work without adviser approval assume full responsibility for their registration. Courses that do not satisfy the requirements of their plans of study will not be applied toward the degree.

Students complete class registration via an Internet-based system known as CheckMarq (<http://checkmarq.mu.edu>). No class may be attended in which the student is not officially registered. It is the student's responsibility to be certain that when registration ends, the schedule of the student accurately reflects only those courses for which he/she plans to attend. All courses for which the student is registered are subject to tuition and in some cases, additional fees. The student is responsible for payment due on all officially registered courses, regardless of attendance.

Students who do not plan to attend the university are responsible for dropping classes through CheckMarq and notifying their respective college office. All courses for which a student is officially registered as of the close of registration are subject to fee assessment and payment, and as such to appear as part of the student's permanent record even if the student does not attend any sessions of the class. To avoid unnecessary fee charges and unnecessary courses with punitive grades on the student's permanent record, it is the student's responsibility to review his/her official registration prior to the end of registration to ensure it accurately reflects the courses the student plans to be enrolled in.

A 50 percent discount on tuition (only) is available to individuals 62 years of age and older taking undergraduate and graduate courses for credit and/or audit. This opportunity is offered to students who have the proper background and prerequisite of the course(s) in question.

## Registration in Graduate Courses

An undergraduate senior may register for a graduate course if the student has a B (3.000) or better average, his/her current program is such as to allow for involvement in graduate level work, and the Graduate School approves of the registration. To register for a graduate course, an undergraduate student must complete the Permission to Enroll in a Graduate Course form, available on the Graduate School website ([http://www.marquette.edu/grad/forms\\_index.shtml](http://www.marquette.edu/grad/forms_index.shtml)). The student is responsible for securing the necessary signatures (including the dean of his/her undergraduate college or school and the course instructor), returning the completed form to the department offering the course, then registering for the course using the CheckMarq system and the permission number provided.

Undergraduate students taking graduate level courses or cross-listed (5000 numbered) courses with the intention of transferring the credits to a graduate program must be graded according to Graduate School standards. Courses may not be graded using the CR/NC, S/U, SNC/UNC or AU (audit) unless that is the only grading option available for the course.

For information on transferring credits to a Marquette graduate program see the Graduate Bulletin.

## Reinstatement to the University

A student who is academically dismissed (required to withdraw for academic reasons) at the end of a term may appeal the decision in writing to the college office. If the appeal is granted for the term immediately following the dismissal, the student is not required to apply for readmission. Instead, the student will be reinstated to the university on probation status. The official transcript will reflect both the academic dismissal and the reinstatement on probation.

A student who is academically dismissed at the end of a term and leaves the university for one or more terms must apply for readmission and, as part of the readmission application, request reinstatement to the university. If the return to the university is approved, the official transcript will reflect both the academic dismissal and the reinstatement on probation.

Please note: a student who is academically dismissed at the end of the spring term and seeks to transfer to another college within the university for the immediate fall term, must apply for internal transfer no later than the first Monday in July in order to retain any previous housing assignment. For policy on internal transfer, see Transfer to Another Undergraduate College Within the University (p. 80) , located in this Academic Regulation section of the Undergraduate Bulletin.

## Repeated Courses

Undergraduate students who repeat a course, may do so under certain conditions:

1. Normally, the repeated course is taken at Marquette.
2. The repeated course is identical to the original course in subject, catalog number, title, subtitle and credits.
3. The repeated course is graded with the same grading options as the original, i.e., students may not exercise the CR/NC option for a repeated course.
4. Courses that are failed may be repeated until a passing grade is earned.
5. A passing grade is determined by the grade that is required in order to receive credit for the course, or to fulfill the program requirements of a degree/major/minor/certificate, as published in the academic program requirements of the university/college/school/department.
6. Courses in which a passing grade is earned may be repeated only once.
7. These courses allow unlimited repeats: colloquiums, continuation placeholder, co-ops, independent study/research, internships, practicums/clinicals/field work experience, seminar/reading, studio/workshops, study abroad and variable title courses (e.g., topics).

Credit hours earned in a repeated course are only awarded once; however, all previous courses and grades remain on the student's permanent academic record. Beginning Fall 1999, the grade in the original course is excluded from the cumulative grade point average calculation. The cumulative grade point average is adjusted at the time the repeated course is graded. If a student audits or withdraws from the repeated course, the earlier grade will remain in the cumulative grade point average. If a student repeats a course that was transferred to Marquette, only the Marquette course/grade will be reflected in the total credits earned.

At the time of registration, the repeat process is automated for the first repeat of any course that is not an unlimited repeat course. Should a student need to repeat a course more than once, a request to repeat must be filed using the Request Permission to Repeat a Course form (<http://www.marquette.edu/mucentral/registrar/documents/Form-UndergraduateRepeatCoursePermission.pdf>). This request will only be approved if the student has not earned a passing grade in the course, or the university and/or program requirements state that a certain grade must be earned in that specific course and the student has not previously earned the required minimum grade.

## Residency at Marquette

Residence is defined as the number of courses or credits a student must earn at an institution in order to be awarded a degree from that institution. Residency at Marquette for all undergraduate students, other than those admitted to the College of Professional Students is this: 1) a minimum of 60 Marquette credits are required to earn a Marquette undergraduate degree; 2) for students admitted in Summer 2010 or beyond, the final 30 credits needed to complete a Marquette undergraduate degree must be Marquette credits, unless these credits are earned in an approved study abroad program; for students admitted prior to Summer 2010, 30 of the final 36 requirements needed to complete a Marquette undergraduate degree must be Marquette credits, unless these credits are earned in an approved study abroad program; 3) a minimum of 32 upper-division Marquette credits are required to earn a Marquette undergraduate degree; 4) a minimum of 15 Marquette credits in the major are required to earn a Marquette undergraduate degree. Residency at Marquette for all undergraduate students in the College of Professional Studies is the same as above, with the exception of #1, where the minimum is 45 Marquette credits in order to earn a Marquette undergraduate degree from this college. Any exception to this policy must be approved by the Office of the Provost.

## Study at Other Institutions

Students who plan to study at another institution must obtain written approval for each course prior to enrollment in the course. If prior approval is not obtained, the university reserves the right to not accept the credits earned at the other institution. Course approval forms may be obtained from the student's college office.

Upon completion of the course work, it is the student's responsibility to have an official transcript sent directly from the institution to the Office of the Registrar. Transcripts routed by the student will not be accepted. Transfer credits will not be reviewed or posted to the student's Marquette academic record until the official transcript from the external institution has been recorded in the Office of the Registrar.

## Transfer to another Undergraduate college within the University

The various colleges of Marquette University operate under the jurisdiction of separate deans. Therefore, enrolled students must submit a formal Application for Internal Transfer located at Marquette Central ([http://www.marquette.edu/mucentral/registrar/policy\\_forms.shtml](http://www.marquette.edu/mucentral/registrar/policy_forms.shtml)), if they wish to transfer from one college to another. Various criteria may be considered by the colleges during review of the student's request to transfer colleges, including, but not limited to: current Grade Point Average, cumulative Grade Point Average, prior academic record and prior academic misconduct issues. This internal transfer decision is at the discretion of the dean and the decision of the dean is final. If the application for internal transfer is approved, the student will be governed by the degree requirements of the college into which the transfer is made and normally the degree requirements in effect at the time of the internal transfer. Because Marquette conducts an early registration which begins several months prior to the start of each term, it is to the student's advantage to apply and be admitted to the transfer college as early as possible. Application forms are available online (<http://www.marquette.edu/mucentral/registrar/documents/RTSUndergraduateRequestforInternalTransfer.pdf>) and a completed application must be submitted to the Office of the Registrar no later than one week before the start of the session for which the student wishes to enroll. The College of Nursing has alternative deadlines, that can be found on the Undergraduate Academic Calendar ([http://www.marquette.edu/mucentral/registrar/cal\\_acadcal1112ugrd.shtml](http://www.marquette.edu/mucentral/registrar/cal_acadcal1112ugrd.shtml)).

**Note:** a student who is academically dismissed at the end of the spring term and seeks to transfer to another college within the university for the immediate fall term, must apply for internal transfer no later than the first Monday in July in order to retain any previous housing assignment.



## Withdrawals

### From Courses

A student who wishes to withdraw from one or more courses, but still attend at least one other course during the term, must officially withdraw from the courses using the Undergraduate Single Course Withdrawal Form located online (<http://www.marquette.edu/mucentral/registrar/documents/Form-WithdrawalUndergraduate-SingleCourse.pdf>). The student is not officially withdrawn from any course until the completed withdrawal form with all the necessary signatures is submitted by the student to the office of the academic dean.

A student may obtain permission to withdraw from a course, resulting in a W grade, during the period extending from the day following the end of registration for a particular session, until the date specified in the Undergraduate Academic Calendar ([http://www.mu.edu/mucentral/registrar/cal\\_index.shtml](http://www.mu.edu/mucentral/registrar/cal_index.shtml)); however, if a WA grade has already been assigned by the college office it will remain on the record permanently. After this deadline, a student will no longer be given permission to withdraw from courses except for serious non-academic reasons (e.g., injury, family crisis).

It is the student's responsibility to determine, prior to the withdrawal, if there will be financial aid and/or scholarship consequences, should the withdrawal from courses result in the student's status changing from full-time or part-time.

If a student, at any time, fails to manifest those qualities judged to be appropriate and necessary to the professional field for which he or she is preparing, withdrawal from the program may be initiated by the college and grades of ADW will be assigned if the administrative withdrawal action is taken during the term.

### From the University

A student who is enrolled for one or more classes and decides to withdraw from all courses in a given term (even if enrolled in just one course), or decides to discontinue his/her study at Marquette after a term is complete, must formally withdraw from the university. Withdrawal is accomplished via the Withdrawal for All Students form located online (<http://www.marquette.edu/mucentral/registrar/documents/Form-WithdrawalCollege.pdf>).

After obtaining the official Withdrawal form, a student who wishes to withdraw from the university will personally confer with the dean at the time of such action and will be informed at that time whether he/she must obtain other signatures in addition to the dean's.

A complete term withdrawal will not be processed by the university or considered official until the completed withdrawal form, with all necessary signatures is submitted by the student to the office of the academic dean. The student's financial aid will then be adjusted as required by federal and state refund calculations and institutional policy based on this date. In addition, the student's withdrawal will be reported to the National Student Clearinghouse for purposes of canceling any loan deferments the student may be receiving at the time of withdrawal.

If a student withdraws from the university during the term, without the permission of the dean, he/she will receive the appropriate withdrawal grade by the faculty or the college dean in each course. These grades will be reviewed as part of the readmission process, should the student wish to return to the university in the future.

The only exception permitted to the policies and procedures described above applies to students who have classes only in the evening (after 4:30 p.m.), or are not able to meet with the college office due to extenuating circumstances, such as hospitalization. Such students do not have to physically appear at the academic dean's office; written notification of intent to the college dean's office constitutes acceptable means of compliance with university policy and procedure.

In cases of administrative withdrawal, the student must be readmitted to the university and be cleared by the academic dean and/or the dean of students before the readmission request will be processed.



## University Core of Common Studies

The University Core of Common Studies (UCCS) is the foundation of each student's Marquette educational experience. The Core comprises courses in nine knowledge areas (listed below), and provides students with the knowledge, skills, values and dispositions they will need, wherever their career and personal choices lead. It fosters life-long learning and promotes the values of faith, leadership, excellence and service — values central to the Jesuit educational tradition.

Each of the nine knowledge areas is characterized by student learning outcomes. Students are expected to achieve these outcomes at the completion of their Core studies. Core courses in each knowledge area enable students to achieve Core learning outcomes. To learn more, consult the Core of Common Studies website (<http://www.marquette.edu/programs/core>).

Students are required to complete a minimum of 36-credit hours of core courses. College curricula may require additional courses. Each student may count one dual application course toward the 36-credit hour Core requirement. A dual application core course satisfies core course requirements in two knowledge areas. For example, HIST 1301 Survey of Latin America, would satisfy three credit hours in both the Histories of Cultures and Societies knowledge area and the Diverse Cultures knowledge area. A student who takes the dual application core course satisfies the 36 credit hours of core requirements by taking 33 credits of core courses. Dual application courses are not offered in the knowledge areas of Human Nature and Ethics or Theology, unless approved as an exception by the UCCS Core Committee.

It is recommended that students experience the core courses in a tiered fashion, if possible:

### Examining the World:

|                             |   |
|-----------------------------|---|
| Rhetoric (R)                | 6 |
| Mathematical Reasoning (MR) | 3 |
| Total Credit Hours          | 9 |

### Engaging the World:

|   |    |
|---|----|
| Individual and Social Behavior (ISB)      | 3  |
| Diverse Cultures (DC)                     | 3  |
| Literature/Performing Arts (LPA)          | 3  |
| Histories of Cultures and Societies (HCS) | 3  |
| Science and Nature (SN)                   | 3  |
| Total Credit Hours                        | 15 |

## Evaluating the World:

|                               |    |
|-------------------------------|----|
| Human Nature and Ethics (HNE) | 6  |
| Theology (T)                  | 6  |
| Total Credit Hours            | 12 |

Rhetoric and Mathematical Reasoning foster foundational skills in thinking, writing, speaking, computing and analyzing. Individual and Social Behavior, Diverse Cultures, Literature/Performing Arts, Histories of Cultures and Societies and Science and Nature invite students to explore people, nature and societies. Human Nature and Ethics and Theology challenge students to reflect critically on fundamental human aspirations and values. At each step of his or her college career, a student's perspective broadens and his or her knowledge deepens.

Though core courses foster foundational knowledge, skills and values across the nine knowledge areas, they are fully integrated with the rest of each student's Marquette experience. Each college has a distinctive curriculum, which builds on the University Core of Common Studies. A variety of undergraduate majors and minors also amplify and deepen each student's educational experience as he or she moves further ahead in pursuit of a specialized degree. The University Core of Common Studies, college curriculum requirements and majors and minors are all integral parts of each student's Marquette educational experience.

The following courses have been approved for inclusion in the University Core of Common Studies. Unless noted as a dual application course, each course satisfies a three-credit hour requirement in the knowledge area under which it is listed.

**Note:** New courses are approved for the Core of Common Studies each semester. For a regularly updated list of approved Core courses, consult the Core of Common Studies website (<http://www.marquette.edu/programs/core/list.shtml>).

## Core of Common Studies Courses:

### Rhetoric (R) (6 credit hours):

|           |                            |   |
|-----------|----------------------------|---|
| COMM 1100 | Contemporary Presentation  | 3 |
| ENGL 1001 | Rhetoric and Composition 1 | 3 |
| ENGL 1002 | Rhetoric and Composition 2 | 3 |

### Mathematical Reasoning (MR) (3 credit hours):

|           |                                      |   |
|-----------|--------------------------------------|---|
| COSC 1000 | Introduction to Computer Science     | 3 |
| MATH 1300 | The Nature of Mathematics            | 3 |
| MATH 1390 | Finite Mathematics                   | 3 |
| MATH 1400 | Elements of Calculus 1               | 3 |
| MATH 1410 | Calculus for the Biological Sciences | 3 |
| MATH 1450 | Calculus 1                           | 4 |
| MATH 1451 | Calculus 2                           | 4 |

|           |  |   |
|-----------|--|---|
| MATH 1700 | Modern Elementary Statistics               | 3 |
| MATH 2030 | Problem Solving and Reasoning for Teachers | 3 |
| PRST 2140 | Research and Statistical Methods           | 3 |
| PSYC 2001 | Psychological Measurements and Statistics  | 4 |
| SOCI 2060 | Social Statistics                          | 3 |

**Individual and Social Behavior (ISB) (3 credit hours):**

|           |  |   |
|-----------|--|---|
| AFAS 3131 | Air Force Leadership Studies 1   | 3 |
| COMM 1200 | Media in Society   | 3 |
| CRLS 1001 | Introduction to Criminology  | 3 |
| CRLS 4130 | Women, Crime, and Criminal Justice   | 3 |
| ECON 1001 | Introduction to Economics  | 3 |
| ECON 2003 | Principles of Microeconomics   | 3 |
| INJP 2010 | Introduction to Peace Studies (Dual Application course: Also Diverse Cultures) | 3 |
| NASC 1185 | Leadership and Management  | 3 |
| POSC 2201 | American Politics  | 3 |
| POSC 2401 | Comparative Politics   | 3 |
| POSC 2601 | International Politics   | 3 |
| PSYC 1001 | General Psychology   | 3 |
| PSYC 2101 | Introduction to Life-Span Developmental Psychology for Nursing Students        | 3 |
| PSYC 3101 | Developmental Psychology: Conception Through Adolescence                       | 3 |
| PSYC 3120 | Developmental Psychology: Adulthood and Aging                                  | 3 |
| PSYC 3201 | Introductory Social Psychology   | 3 |
| PSYC 3210 | The Psychology of Prejudice (Dual Application course: Also Diverse Cultures)   | 3 |
| PSYC 3220 | Human Sexuality  | 3 |
| PSYC 3401 | Abnormal Psychology  | 3 |
| PSYC 3501 | Theories of Personality  | 3 |
| PSYC 4330 | Human Factors Engineering  | 3 |
| SOCI 1001 | Principles of Sociology  | 3 |
| SOCI 2200 | The Family   | 3 |

|           |  |   |
|-----------|--|---|
| SOWJ 1001 | Introduction to Social Welfare and Justice | 3 |
| WGST 1001 | Introduction to Women's and Gender Studies | 3 |

### **Diverse Cultures (DC) (3 credit hours):**

|           |  |     |
|-----------|--|-----|
| ADPR 4600 | Multicultural and International Advertising and Public Relations                             | 3   |
| ADPR 4700 | Cultural Identity, Media and World Religions   | 3   |
| ANTH 1001 | Introductory Anthropology  | 3   |
| ARSC 1954 | The Dynamics of Cross-Cultural Engagement 1  | 1.5 |
| ARSC 1955 | The Dynamics of Cross-Cultural Engagement 2  | 1.5 |
| CEEN 3720 | Decent and Affordable Housing  | 3   |
| EDUC 1210 | Introduction to Schooling in a Diverse Society   | 3   |
| EDUC 3240 | Critical Inquiry into Contemporary Issues  | 3   |
| ENGL 4310 | Studies in Global Literature   | 3   |
| ENGL 4810 | Race, Ethnicity, and Identity in American Literature and Culture                             | 3   |
| ENGL 4820 | Studies in Race and/or Ethnic Literature   | 3   |
| ENGL 4830 | African-American Literature  | 3   |
| ENGL 4840 | Post-Colonial Literature   | 3   |
| FREN 3200 | Contributions of the French and Francophone World  | 3   |
| FREN 3300 | French Civilization  | 3   |
| HEAL 1025 | Culture and Health   | 3   |
| HIST 1301 | Survey of Latin America (Dual Application course: Also Histories of Cultures and Societies)  | 3   |
| HIST 1401 | Africa (Dual Application course: Also Histories of Cultures and Societies)                   | 3   |
| HIST 1501 | East Asia (Dual Application course: Also Histories of Cultures and Societies)                | 3   |
| HIST 4135 | African-American History   | 3   |
| INJP 2010 | Introduction to Peace Studies (Dual Application course: Also Individual and Social Behavior) | 3   |
| JPNS 3200 | Japanese Culture and Civilization  | 3   |
| LEOR 3150 | Leadership and Diversity in Organizations  | 3   |
| MANA 3035 | Diversity in Organizations   | 3   |
| PHAS 4117 | Cultural Diversity in Health Care  | 3   |

|           |  |   |
|-----------|--|---|
| PHIL 3380 | Asian Philosophy   | 3 |
| PHIL 3780 | Africana Philosophy  | 3 |
| PTHH 4512 | Culture and Disability   | 3 |
| PSYC 3210 | The Psychology of Prejudice (Dual Application course: Also Individual and Social Behavior) | 3 |
| SOCI 3250 | Race and Ethnic Relations  | 3 |
| SOCI 3280 | Race and Family  | 3 |
| SOCI 4400 | Social Inequality  | 3 |
| SOWJ 2150 | Immigrants and their Communities   | 3 |
| SPAN 3310 | Peoples and Cultures of Spanish America  | 3 |
| SPAN 4320 | Contemporary Issues in the Hispanic World  | 3 |
| SPAN 4400 | U.S. Latino/a Literature   | 3 |
| THEO 2420 | Bridging the Racial Divide (Dual Application course: Also Theology)                        | 3 |
| THEO 4020 | The Bible in the Jewish Community  | 3 |

### **Literature/Performing Arts (LPA) (3 credit hours):**

|           |  |   |
|-----------|--|---|
| ARSC 2970 | Arts in a Democratic Society               | 3 |
| CLAS 3025 | Classical Mythology                        | 3 |
| COMM 2100 | Introduction to Visual Communication       | 3 |
| ENGL 1301 | Honors English 1                           | 3 |
| ENGL 1302 | Honors English 2                           | 3 |
| ENGL 2310 | Introduction to Global Literature          | 3 |
| ENGL 2410 | Introduction to British Literature 1       | 3 |
| ENGL 2420 | Introduction to British Literature 2       | 3 |
| ENGL 2510 | Introduction to American Literature 1      | 3 |
| ENGL 2520 | Introduction to American Literature 2      | 3 |
| ENGL 2710 | Introduction to Literature: Fiction        | 3 |
| ENGL 2720 | Introduction to Literature: Drama          | 3 |
| ENGL 2730 | Introduction to Literature: Poetry         | 3 |
| ENGL 2740 | Reading Film as Narrative                  | 3 |
| ENGL 2931 | Topics in Literature and Culture           | 3 |
| FREN 3500 | Introduction to Textual Analysis in French | 3 |



|           |   |   |
|-----------|---|---|
| FREN 4500 | The Middle Ages in France: 1050-1450  | 3 |
| FREN 4510 | Sixteenth Century French Literature   | 3 |
| FREN 4540 | Nineteenth Century French Literature  | 3 |
| GRMN 3210 | German Literature in English Translation:                                     | 3 |
| GRMN 3500 | The Modern German Short Story   | 3 |
| ITAL 3210 | Italian Literature in English Translation:                                    | 3 |
| JPNS 3210 | Japanese Literature in English Translation:                                   | 3 |
| LATN 3500 | Survey of Republican Latin Literature   | 3 |
| MUSI 1020 | Appreciation of Music   | 3 |
| MUSI 2420 | History of the Musical in America   | 3 |
| SPAN 3500 | Introduction to Literary Analysis in Spanish                                  | 3 |
| SPAN 3505 | Introduction to Literary Analysis in Spanish for Heritage and Native Speakers | 3 |
| THAR 1020 | Theatre Appreciation  | 3 |

### **Histories of Cultures and Societies (HCS) (3 credit hours):**

|           |  |   |
|-----------|--|---|
| HIST 1001 | Growth of Western Civilization to 1715                                   | 3 |
| HIST 1002 | Growth of Western Civilization since 1715                                | 3 |
| HIST 1101 | Introduction to American History   | 3 |
| HIST 1301 | Survey of Latin America (Dual Application course: Also Diverse Cultures) | 3 |
| HIST 1401 | Africa (Dual Application course: Also Diverse Cultures)                  | 3 |
| HIST 1501 | East Asia (Dual Application course: Also Diverse Cultures)               | 3 |
| MISL 1800 | American Crucible: The Military and the Development of the United States | 3 |
| NASC 1022 | Sea Power and Maritime Affairs   | 3 |

### **Science and Nature (SN) (3 credit hours):**

|           |                                    |   |
|-----------|------------------------------------|---|
| ARSC 1020 | Major Concepts in Modern Science 1 | 4 |
| ARSC 1021 | Major Concepts in Modern Science 2 | 4 |
| BIOL 1001 | General Biology 1                  | 3 |
| BIOL 1009 | Biology for Non-Science Majors     | 3 |
| BIOL 1406 | Plants, Pathogens and People       | 3 |

|           |  |   |
|-----------|--|---|
| BISC 1010 | Contemporary Issues in Nutrition             | 3 |
| BISC 1015 | Principles of Human Anatomy and Physiology   | 5 |
| CHEM 1001 | General Chemistry 1                          | 4 |
| CHEM 1002 | General Chemistry 2                          | 4 |
| PHYS 1001 | General Physics 1                            | 4 |
| PHYS 1002 | General Physics 2                            | 4 |
| PHYS 1003 | General Physics with Introductory Calculus 1 | 4 |
| PHYS 1004 | General Physics with Introductory Calculus 2 | 4 |
| PHYS 1007 | Survey of Meteorology                        | 3 |
| PHYS 1008 | Astronomy and Space Physics                  | 3 |
| PHYS 1009 | Earth and Environmental Physics              | 3 |
| PHYS 1013 | Classical and Modern Physics with Calculus 1 | 4 |
| PHYS 1014 | Classical and Modern Physics with Calculus 2 | 4 |
| PRST 1120 | Aspects of Modern Science                    | 3 |

**Human Nature and Ethics (HNE) (6 credit hours):**

|           |                            |   |
|-----------|----------------------------|---|
| PHIL 1001 | Philosophy of Human Nature | 3 |
| PHIL 2310 | Theory of Ethics           | 3 |

**Theology (T) (6 credit hours):**

|           |   |   |
|-----------|---|---|
| THEO 1001 | Introduction to Theology                        | 3 |
| THEO 2000 | Hebrew Scriptures: Old Testament Overview       | 3 |
| THEO 2010 | Hebrew Scriptures/Old Testament Selected Books: | 3 |
| THEO 2100 | New Testament Overview                          | 3 |
| THEO 2110 | New Testament Selected Books:                   | 3 |
| THEO 2200 | The Bible Through the Ages                      | 3 |
| THEO 2210 | Theology Through the Centuries                  | 3 |
| THEO 2300 | Quests for God, Paths of Revelation             | 3 |
| THEO 2310 | Explorations in Christian Theology              | 3 |
| THEO 2320 | The Event and Meaning of Vatican II             | 3 |
| THEO 2400 | Christian Discipleship                          | 3 |

|           |   |   |
|-----------|---|---|
| THEO 2410 | Christian Faith in Cultural Contexts  | 3 |
| THEO 2420 | Bridging the Racial Divide (Dual Application course: Also Diverse Cultures) | 3 |

# Student Resources and Facilities

## Student Resources

### Disability Services

Marquette University strives to integrate qualified students with disabilities as fully as possible into all aspects of university life. The Office of Disability Services, located within Student Educational Services, has been designated to coordinate this process in accordance with the university's compliance responsibilities under the law. Accommodations determinations for all students with identified and documented disabilities will be made on a case-by-case basis. Examples of possible accommodations or services provided to students with disabilities include: alternative texts, interpreting, lecture notes, testing arrangements informal counseling, advocacy training, etc.

More detailed information about accessibility for all students at Marquette can be found at the Disability Services website (<http://www.marquette.edu/oses/disabilityservices>). The Office of Disability Services is located in Marquette Hall Room 05; P.O. Box 1881; Milwaukee, WI, 53201-1881; P (414)288-1645; F (414) 288-5799.

### E-mail Policy

Marquette University utilizes e-mail as one of the official means of communication with students to keep them informed of important information such as financial aid and billing data; college deadlines, events and updates; and important campus news. Each student is issued an official eMarq e-mail account for use while he or she is enrolled. For more information, see the university's e-mail policy (<http://www.marquette.edu/its/about/official.shtml>).

## Honor Societies

### Alpha Sigma Lambda

The Zeta Psi chapter of Alpha Sigma Lambda was established at Marquette in 1990. The society honors those dedicated part-time adult students who, while handling their life responsibilities, achieve and maintain high scholastic standards. Students in the College of Professional Studies and part-time students at Marquette University are inducted annually. For information, contact the College of Professional Studies (<http://www.marquette.edu/cps/>) at (414) 288-3153.

### Alpha Sigma Nu

Founded in 1915 at Marquette University, Alpha Sigma Nu honors students who distinguish themselves in scholarship, loyalty to the ideals of Jesuit education and service to campus and community. Membership requirements include junior/senior standing and a grade point average placing in the top 15 percent of the class. Graduate students who have completed one-half of their credit requirements are eligible and subject to the same criteria. Of the pool of eligible students, only four percent from each class will be invited to membership. Alpha Sigma Nu has 28 student Chapters in the United States, two in Canada, and one in South Korea. There are 66,000 student and alumni members.

The only honor society permitted to bear the name Jesuit, AΣN encourages its members to a lifetime pursuit of intellectual development, deepening Ignatian spirituality, service to others, and a commitment to the core principles of Jesuit education. The 32 Student Chapters and Alpha Sigma Nu Alumni Clubs in 14 cities across the country sponsor Ignatian spirituality series, service projects, academic programs and speaker events.

Alpha Sigma Nu funds scholarships at its member institutions. In collaboration with the Association of Jesuit Colleges and Universities, AΣN sponsors the Alpha Sigma Nu Book Awards, honoring outstanding publications by the faculty at Jesuit colleges and universities.

Alpha Sigma Nu's headquarters remain at Marquette University. For information, contact the office at (414) 288-7542 or visit Alpha Sigma Nu (<http://www.AlphaSigmaNu.org>).

## **Phi Beta Kappa**

Phi Beta Kappa, chartered at William and Mary in 1776, is the oldest and most prestigious of the academic honor societies in the United States. Its purpose is to distinguish superior academic character and achievement and, through lectureships, scholarships, and publication of *The American Scholar*, to promote liberal education throughout the country. There are only 280 chapters, and Marquette's Zeta chapter dates from 1971. Membership requirements typically include good (faculty-attested) academic character and a GPA in liberal arts courses within the top seven or eight percent of the graduating class. Students need not apply to be considered for membership. For further details, consult the Klingler College of Arts and Sciences at (414) 288-7059 for the name of the current secretary.

## **Marquette Central**

This office is the primary source for student enrollment and financial services information and assistance. Once a student is admitted to the university, this office is available to help students through Marquette processes and serves as a resource for questions about registration, student financial aid and student accounts. For more information, visit the Marquette Central website (<http://www.marquette.edu/mucentral/>).

## **Public Safety**

As the Marquette community is located in downtown Milwaukee, students need to be aware of the realities of city living. Recognizing this, the university strives to educate students about personal safety and crime prevention through a wide variety of safety programs and services.

Marquette maintains its own Department of Public Safety as a security and safety service to the university community. The department is located on the first floor of the 16th Street Parking Structure, 749 N. 16th St. (between Wisconsin Avenue and Wells Street). This location houses Public Safety Administration, Officer Operations, Communications Center, Preventive Services, and Student Safety Programs. Public Safety operates 24 hours a day, every day. Services can be obtained by calling (414) 288-6800. For more information, visit the Department of Public Safety website (<http://marquette.edu/publicsafety/>).

## **Schedule of Classes (Snapshot)**

Snapshot is an online Schedule of Classes students access to determine what courses to take each term. In addition, Snapshot will provide a list of those classes that meet certain degree requirements or are of special interest, such as: University Core of Common Studies (UCCS) courses, Interdisciplinary courses or online courses. Click here to go to Snapshot (<http://www.marquette.edu/mucentral/registrar/snapshot/>).

## **Student Educational Services**

Marquette offers assistance to students in tutoring and study skills. For more information, visit the Student Educational Services website (<http://www.marquette.edu/tutoring/>).

## **Student Handbook**

The Student Handbook, also issued annually, contains information and regulations on housing, conduct and student activities. Rules governing eligibility for membership and participation in student organizations, as well as descriptions of all recognized student organizations, also are contained in the Student Handbook. Copies of the handbook are available from the Office of Student Development (<http://www.marquette.edu/osd/>).

Many colleges and departments issue a student handbook unique to their majors. Students in these majors are also governed by the rules and regulations of this handbook.

## **Student Information System (CheckMarq)**

Marquette students obtain up-to-the moment information, monitor their academic record, view courses, register and update their address/phone numbers online by using the CheckMarq system via the Internet. Students can access CheckMarq from any computer with Internet access. Click here to go to CheckMarq (<http://checkmarq.mu.edu>). CheckMarq requires both a user name and password. Information Technology Services assigns user names and passwords to all new students for the duration of their studies at Marquette.

## **Transcript of Academic Record**

A transcript is a complete and unabridged copy of all academic work attempted at Marquette University. Course and grade information contained on the transcript are released pursuant to the Family Educational Rights and Privacy Act of 1974 (as amended).

A student may obtain a transcript of his or her Marquette record by completing a Transcript Request form available at Marquette Central (<http://www.marquette.edu/mucentral>) and submitting it to the Office of the Registrar. Current students may request a transcript online via their CheckMarq account. All transcript requests should be submitted one week in advance of the date the transcript is needed.

The fee for this regular service is \$5 per transcript. The fee for a rush or immediate transcript service is \$10 per transcript. All transcript fees are payable at the time of the request.

Every transcript that is issued directly to a student is clearly marked. Because most institutions will not accept a transcript that has been in the student's possession, we strongly recommend the student request the Office of the Registrar to mail a transcript directly to the institution involved. Students who fail to follow this recommendation are liable for any further charges when additional transcripts are ordered.

## **Veterans Benefits**

The Office of the Registrar acts as liaison between the student and the Veterans Administration, the Wisconsin Department of Military Affairs and the Wisconsin Department of Veterans Affairs. Any student eligible to receive educational benefits under one of the various Veterans Administration programs must report to Marquette Central at the beginning of each fall, spring or summer term for which he or she is registered. Information or consultation is available at any time during regular office hours. For more information regarding veterans' benefits, visit Marquette Central (<http://www.marquette.edu/mucentral>).

Marquette participates in the Yellow Ribbon GI Education Enhancement Program; which is a provision of the Post-9/11 GI Bill. This program allows institutions of higher learning in the United States to voluntarily enter into an agreement with the VA to fund tuition expenses that exceed the highest in-state

public undergraduate rate. The number of student sponsored for Yellow Ribbon Program benefits is limited. For additional information visit the Veterans Benefits site on the Marquette Central website.

VA regulations require schools to enforce certain standards of progress in regard to certifying veterans for educational benefits; therefore any veteran who wishes to receive veterans' educational benefits must meet the published academic standards and requirements of the university.

## **Facilities**

### **Haggerty Museum of Art**

The Haggerty Museum of Art serves as a laboratory for learning focused on the visual arts by collecting, exhibiting and interpreting works of art in the context of Marquette University and Milwaukee. The museum's exhibitions and educational programs are designed to contribute to transformational lifelong learning and enjoyment of the arts. For more information, visit the Haggerty Museum of Art website ([http://www.marquette.edu/haggerty/permanent\\_collection.shtml](http://www.marquette.edu/haggerty/permanent_collection.shtml)).

### **Hartman Literacy and Learning Center**

The Hartman Literacy and Learning Center is a facility within the College of Education, which supports undergraduate and graduate literacy-related programs. The center library houses a children's literature collection, which is used by College of Education students as well as children and families participating in the Marquette University Family Literacy Project, a collaboration between the university and neighborhood elementary schools. Students enrolled in EDUC 4964 (Practicum in Reading) participate in the Family Literacy Project by tutoring small groups of children in reading and writing after school. The Hartman Literacy and Learning Center provides faculty and staff to support and conduct research regarding the project. For more information, visit the Hartman Center website ([http://www.marquette.edu/education/centers\\_clinics/hlc.shtml](http://www.marquette.edu/education/centers_clinics/hlc.shtml)).

### **Instructional Media Center**

The Kenneth Shuler Instructional Media Center (IMC) provides a wide range of multimedia creation and presentation services for the Marquette University community. The IMC's primary obligation is to support and enhance Marquette's classroom instruction through technology. The IMC is also responsible for audio-visual equipment distribution and technical support in presentation classrooms throughout the campus. In addition, the IMC produces media that augment the university's public communication goals. These efforts include the creation of photography, audio, videos, and multimedia for informational, development and student recruiting purposes.

The facilities of the IMC are state-of-the-art and an important component of the J. William and Mary Diederich College of Communication's broadcasting curriculum. Our facilities include two digital television studios, eight video editing suites, three audio studios, and computer graphics platforms. These advanced facilities are used as classrooms and laboratories by students pursuing a degree in Broadcast and Electronic Communication. Students also have access to these facilities as they participate in MUTV and/or MUR the student operated campus television and radio stations. For more information, visit the Instructional Media Center website (<http://www.marquette.edu/imc/>).

## **Libraries**

The university's libraries support the teaching, research, and service mission of Marquette University by providing access to recorded knowledge through collections, services, cooperative programs and connections to worldwide resources. The libraries combine state-of-the-art technologies with a repository of information in an atmosphere of service and learning. A full description of resources, hours, news, and services is found at the Libraries' website (<http://www.marquette.edu/library/>).

Collections of more than 1.7 million volumes and 3,700 print subscriptions are housed in the John P. Raynor, S.J., Library and the adjoining Memorial Library; the Law Library is separately described below. The libraries' shared online catalog, MARQCAT, includes all book and periodical holdings, locations and circulation status.

## **Raynor Memorial Libraries**

The Raynor Library holds a commanding position at the physical and intellectual center of the campus. Raynor Library is designed around the needs of its users, preserving the university's extensive traditional collections, while expanding its capacity for incorporating digital technology into access and delivery of information.

### **For more information on Raynor Memorial Libraries:**

- Libraries' website (<http://www.marquette.edu/library/>).
- Special Collections and Archives (<http://www.marquette.edu/library/archives/index.shtml>). (<http://www.marquette.edu/contact/CampusMap.pdf>)
- AskUs! (<http://www.marquette.edu/library/research/askus.shtml>) Phone, e-mail, IM or text information services.
- Library Hours (<http://www.marquette.edu/library/about/hours.shtml>) or 24-hour recorded message (414) 288-1530.

## **Law Library**

The primary mission of the Marquette University Law Library is to support, through its information and service resources, the curricular, research and service activities of the Marquette University Law School faculty and students. For more information, visit the Law Library website (<http://law.marquette.edu/cgi-bin/site.pl?2130&pageID>).

## **Research Centers and Institutes**

In order to foster and enhance research and study at Marquette University, a number of units on campus have established thematic research centers and institutes. These centers and institutes offer the opportunity for active collaboration and research in a variety of categorical areas.

The centers generally are designed to bring an interdisciplinary focus to the study of complex problems and involve the participation of several faculty members. Opportunities are available for student participation in the programs of several of the centers and institutes.

The Office of the Provost maintains a list of currently active centers and institutes (<http://www.marquette.edu/research/centers.php>).

## **Residence Halls**

Living in a residence hall provides students with welcoming, living-learning communities that enhance their out-of-classroom experiences and their sense of belonging within the university.

The university accommodates students in men's, women's and coeducational residence halls and in university-owned apartments. Each residence hall provides easy access to classes, comfortable furnishings, 24-hour desk security and a chance to get involved through events and residence hall councils. The residence halls employ qualified students as resident assistants for each floor or wing, while full-time, professionally trained staff direct each hall. For more information, visit the Residence Life website (<http://www.marquette.edu/orl/>).





## Student Financial Aid

The primary purpose of the financial aid program at Marquette is to aid those students who would be unable to attend the university without assistance. Marquette makes every effort within its means to assist such students in financing their education.

Financial resources available to undergraduate students include scholarships, grants, loans and part-time employment. Since these resources can be limited, priority for financial assistance is based on the financial need of the applicant as well as the date on which all application materials have been received by the Office of Student Financial Aid. Students should begin the application process the January prior to enrollment.

For detailed information on the programs and procedures described in this section and others, which may not be listed here, consult Marquette Central (<http://www.marquette.edu/mucentral/financialaid/index.shtml>). The website is the primary means of communication. Questions can be sent via e-mail to [mucentral@Marquette.edu](mailto:mucentral@Marquette.edu) or by contacting the Office of Student Financial Aid; Marquette University; P.O. Box 1881; Milwaukee, WI 53201-1881, or by calling (414) 288-4000.

## Application

To be considered for scholarships, grants, employment and loans, entering freshmen and advanced standing (transfer) students must complete the Marquette university application for admission. No applicant will be considered for financial assistance until he or she has been formally admitted into the university, although one certainly can apply for financial aid before acceptance to the university has been granted.

Applicants are also required to complete a free application for Federal student aid (FAFSA). The FAFSA

allows the Office of Student Financial aid to determine each applicant's financial need in a uniform manner. The Title IV School Code for Marquette is 003863.

## Scholarships

Marquette university scholarships are funded through gifts and endowments provided by private donors in addition to funds set aside by the university. All applicants meeting the December 1 admission application deadline will be considered for the Ignatius scholarship. Selection for Ignatius scholarships is based upon meeting specific academic requirements.

Marquette University also offers competitive scholarships, athletic scholarships and ROTC scholarships. For information about selection criteria, application procedures, deadlines and renewal requirements for all Marquette scholarships consult the Office of Undergraduate Admissions' Web site at: [marquette.edu/explore/scholarships.shtml](http://marquette.edu/explore/scholarships.shtml).

## Grants

A grant is a form of financial assistance, which does not have to be repaid. Funding for grant programs is supplied by state and federal agencies as well as institutional sources.

**Federal Pell Grant (PELL):** this is a federal program, which provides funds to eligible undergraduate students who do not possess a bachelor's degree. Students eligible for assistance through this grant program may receive up to \$5,550 per year.

**National Science and Mathematics Access to Retain Talent Grant (SMART)**

: the SMART Grant is a new federal program for third and fourth year students who meet the following criteria: Pell eligible; 3.000 cumulative GPA; and enrolled in an eligible program of study (computer science, engineering, critical foreign languages, life science, mathematics, physical sciences, technology or multidisciplinary studies). Students can receive up to a maximum award of \$4,000 per year.

**Wisconsin Tuition Grant (WTG):** (Wisconsin residents only) this grant program, funded by the state of Wisconsin, attempts to provide a percentage of the cost differential between attendance at a public and private institution. In order to be eligible, a student must be a legal resident of the state of Wisconsin, enrolled in an undergraduate program at least half-time, and must not possess a bachelor's degree. The amount of this grant ranges from \$250 to \$2,900 and is based on need. WTG can be received for a maximum of ten terms.

**Marquette University Grants (MU Grant):** Mu Grants are awarded to full-time undergraduate students who must show financial need and do not possess a bachelor's degree.

**Talent Incentive Program Grants (TIP Grants):** the TIP Program is a Wisconsin state-sponsored program providing grants to eligible Wisconsin residents with exceptional financial need. Recipients must meet state criteria as low income/disadvantaged students. Grants range up to \$1,800 per year. TIP Grants can be received for a maximum of 10 terms.

**Miscellaneous Grants:** the Office of Student Financial Aid also administers other federal and state grants.

## Loans

Students are considered for loan assistance if they are attending Marquette on at least a halftime basis and are in good academic standing. Loans must be repaid according to the terms outlined on the promissory note for each loan program.

The principal loan programs administered by Marquette are the Federal Perkins Loan, the William D. Ford Federal Direct Stafford Loan and the William D. Ford Federal Direct Plus loan. Eligible students will receive promissory note materials after indicating they wish to accept the loans.

## Student Employment

The primary function of student employment services, located within the Office of Student Financial Aid, is to assist students in securing employment on campus or within businesses in the area. Many students help finance their education through part-time employment. Part-time employment can benefit students in several ways:

- Employment helps offset the cost of education.
- Students who work tend to manage their time better than students who do not.
- Studies have shown that grades don't suffer if students limit the number of hours worked to less than 20 per week.
- Part-time employment can be an important part of the total educational experience at Marquette. Students can learn good work habits, human relations skills and other skills that may not be learned in the classroom. There are an ample number of jobs for those who want to work. To conduct a

successful job search, new students should begin in mid-July by accessing JobConnection. Job vacancies are filled on a first-come, first-served basis. Once a job is secured, students can arrange a work schedule around their class schedule. Typical jobs include food service worker, laboratory assistant, residence hall desk receptionist, typist, computer programmer, maintenance worker, community service worker and many more. Off-campus jobs are found in non-profit agencies as well as many area businesses. Students wishing to work must comply with the immigration reform act of 1986. This means that the student will need to complete an I-9 form with the Office of Student Employment on the first day of employment. Student must provide actual documentation (i.e., Social Security card and driver's license or U.S. passport). Therefore, copies or faxes of documents are not acceptable. Please be sure to check the last page of the I-9 form for a list of acceptable documents to complete the I-9 process. Student may view the I-9 requirements on the student employment website. Visit [marquette.edu/mucentral/financialaid/ses\\_i9.shtml](http://marquette.edu/mucentral/financialaid/ses_i9.shtml). Contact Student Employment at [studentemployment@marquette.edu](mailto:studentemployment@marquette.edu) with questions.



## Tuition, Fees and Housing

The staff in Marquette Central is dedicated to providing service to our students and families in a professional and friendly manner while following the policies and procedures set forth by the university. The office provides accurate and timely information about each student's bursar account while encouraging our students to be active participants in managing their account. The final step to complete a student's registration is payment in full of all fees for the term. Marquette University sends a monthly electronic billing statement to each student while the student has an account balance. A student may also view his/her bursar account via CheckMarq (<https://checkmarq.mu.edu/>). Payment due dates are available at [marquette.edu/mucentral](http://marquette.edu/mucentral). It is the student's responsibility to pay tuition, fees and housing by the published due date whether he/she receives a bill or not. Students who do not plan to attend the university are responsible for dropping classes through CheckMarq and notifying their respective college office. All courses for which a student is officially registered as of the close of registration are subject to fee assessment and payment, and as such to appear as part of the student's permanent record even if the student does not attend any sessions of the class to avoid unnecessary fee charges and unnecessary courses with permanent grades of NC, UW, UNC, WA or F on the student's permanent record, it is the student's responsibility to review his/her official registration prior to the end of late registration to ensure it accurately reflects the courses the student plans to be enrolled in. A student who does not pay in full by the due date, enroll in the Marquette Monthly Payment Plan or submit a billing authorization from an approved sponsor will be subject to a 1 percent late payment fee which is assessed monthly (12 percent annual percentage rate) on the outstanding balance if the student does not pay the delinquent balance, Marquette may cancel a student's registration for the current term, prevent the student from registering for a subsequent term, withhold a student's academic transcript or diploma, turn the student's account over to a collection agency and/or take legal action to collect any balance due.

## Tuition Discount

A 50 percent discount on tuition (only) is available to individuals who audit classes. This opportunity is offered to students who have the proper background and prerequisite of the course(s) in question. A student whose total credit hours equal 12 or more including audit courses, will be assessed the full-time rate based on their career. This discount is not available to individuals who take the senior citizen discount. A 50 percent discount on tuition (only) is available to individuals 62 years of age and older taking undergraduate and graduate courses for credit and/or audit. This opportunity is offered to students who have the proper background and prerequisite of the course(s) in question.

## Payment Options

### Traditional Semester Payment

Payment of all tuition and other billed charges is due in full prior to the beginning of each term.

- Cash and checks are acceptable methods of payment.
- Electronic payment (direct debit from checking or savings account) may be made by accessing the link on the Marquette Central website at [marquette.edu/mucentral](http://marquette.edu/mucentral).
- Credit card payment is available through a third party provider. The convenience fee for using this service is variable depending on the amount of the charge. This service may be accessed through the link on our Web site at [marquette.edu/mucentral](http://marquette.edu/mucentral) or by calling (866) 893-4518.

## Marquette Monthly Payment Plan

Marquette offers a payment plan administered by Tuition Management Systems Inc. The Marquette Monthly Payment Plan allows students and their families to pay tuition, fees, university housing and/or meal charges in five equal monthly installments. There is a \$35 semester enrollment fee, but there are no interest charges involved.

## Payment by a University Approved Third Party Sponsor

The Office of the Bursar works with students who receive tuition assistance through a third party. The third party will be billed for all or part of a student's financial account charges after the university registration add/drop date. Please note that if your employer requires grades prior to paying for a class, we cannot set them up as a third party sponsor.

## 2011-12 Tuition and Housing Fees

### Full-Time Tuition Rates

| Program                                      | Cost     |
|--|----------|
| Arts and Sciences (12-18 credit hours)       | \$15,700 |
| Business Administration (12-19 credit hours) | \$15,700 |
| Communication (12-18 credit hours)           | \$15,700 |
| Education (12-18 credit hours)               | \$15,700 |
| Engineering (12-19 credit hours)             | \$15,700 |
| Health Sciences (credit hours may vary.)     | \$15,700 |
| Nursing                                      | \$15,700 |

An additional \$185 per credit hour will be assessed for students taking more than 18 credits hours (19 for engineering and business).

### Student Fees

The following required fees are charged to all full-time undergraduate students per semester:

| Program                    | Cost  |
|----------------------------|-------|
| Student Activity Fee       | \$30  |
| Student Health Service Fee | \$136 |
| UPASS Fee                  | \$45  |
| Total Student Fees         | \$211 |

## Room and Board Rates

For 2011-12 Room and Board rates please visit the Marquette Central website:

| Hall              | Room Type    | Single Meal Plan |
|-------------------|--------------|------------------|
| <b>Abbotsford</b> | Triple       | \$4,505          |
| <b>Carpenter</b>  | Single       | \$5,875          |
|                   | Double       | \$5,115          |
| <b>Cobeen</b>     | Single       | \$5,820          |
|                   | Double       | \$5,030          |
|                   | Triple       | \$4,155          |
|                   | Quad         | \$5,085          |
| <b>McCabe</b>     | Large Double | \$5,340          |
|                   | Triple       | \$4,505          |
| <b>Mashuda</b>    | Single       | \$5,875          |
|                   | Double       | \$5,320          |
|                   | Large Double | \$5,340          |
|                   | Triple       | \$4,405          |
|                   | Quad         | \$5,245          |
| <b>McCormick</b>  | Double       | \$5,115          |
|                   | Triple       | \$4,405          |
| <b>O'Donnell</b>  | Single       | \$5,820          |
|                   | Double       | \$5,030          |
|                   | Triple       | \$4,270          |
| <b>Schroeder</b>  | Double       | \$5,115          |
|                   | Triple       | \$4,505          |
| <b>Straz</b>      | Single       | \$5,875          |
|                   | Double       | \$5,445          |
|                   | Quad         | \$4,730          |

## Meal Plan Only

| Meal           | Cost   |
|----------------|--------|
| Anytime Dining | \$1805 |



## Refunds and Adjustments

Students who have prepaid charges but do not register for classes will be given a full refund, less applicable non-refundable deposits. Students who register for classes and subsequently change their course load through either a partial withdrawal from courses or a complete withdrawal from the university will have adjustments made to their student accounts. If an adjustment results in a refund due to the student, proper application must be made with Marquette Central to obtain the refund. See this bulletin for a full description of withdrawal procedures.

After the first class, laboratory and special course fees are non-refundable. Tuition deposits are non-refundable but are applied toward first term tuition charges.

Refunds for tuition and board will be given based on the following schedules:

| Refund    | Condition              |
|-----------|------------------------|
| 100%      | Through registration   |
| 80%       | During the second week |
| 60%       | During the third week  |
| 40%       | During the fourth week |
| 20%       | During the fifth week  |
| No Refund | After the fifth week   |

# Helen Way Klingler College of Arts and Sciences

## From the Dean

Klingler College of Arts and Sciences website (<http://www.marquette.edu/as/index.shtml>)

Welcome!

The students and faculty of the Klingler College of Arts and Sciences form a community of scholar-learners at the heart of the University. Everything we do as a college serves to provide an intellectual environment that fosters excellence in educating the whole person: body, soul, heart and mind. Through a combination of literary, philosophical and scientific training, we seek to help students acquire a foundational body of knowledge and skills in critical thinking. This groundwork enables students to develop their powers of imagination, intellect and inquiry so that they can interact in a world of change and discovery.

Students today can expect to make multiple career changes in their lifetimes, which will require the critical thinking and communication skills that lie at the heart of a liberal arts education. In order to face increasingly rapid changes, complex challenges and new opportunities, our students will need an understanding of multiple academic disciplines and perspectives. Through their work as educators, governmental or nonprofit organization leaders, business people, scientists, health care professionals or through any other life-work they choose, our graduates will face complex issues, often with global implications. Our students will be able to draw on the skills developed in the depth of study of their chosen major and in the breadth of the College Curriculum in order to live as leaders in service to others. We offer our students a liberal arts education that provides a foundation for living an integrated life, with an appreciation for arts and literature, the fullness of the human experience and an ongoing exploration of one's spiritual life.

I invite you to explore the individual departments, as well as the college's section, in order to learn more about the educational offerings of each program and to choose a career path from the broad range of opportunities available in the Klingler College of Arts and Sciences.

Sincerely,

Rev. Philip J. Rossi, S.J., Ph.D.  
Interim Dean, Klingler College of Arts and Sciences

## College Mission Statement

The Klingler College of Arts and Sciences forms undergraduate students in all the intellectual, moral and spiritual virtues to which their nature and their God call them, developing in them the ability to live full human lives that are responsible to the whole human community.

As a college of Marquette University, it achieves these goals in dialogue with the living traditions of the Catholic Church and the Society of Jesus. It is therefore dedicated to the pursuit of truth in all its forms, mainly through formal teaching and research in the humanities and the social and natural sciences, but also through caring, personal guidance of students by its faculty and staff.

Through its teaching, research and service, the college also contributes in a substantial way to the well-being of those wider communities in which it lives.

## College Introduction

The Klingler College of Arts and Sciences is home to over 30 undergraduate majors offered in 13 academic departments (Biological Sciences; Chemistry; Economics, which is housed jointly in the Colleges of Arts & Sciences and Business; English; Foreign Languages and Literatures; History; Mathematics, Statistics and Computer Science; Philosophy; Physics; Political Science; Psychology; Social and Cultural Sciences; and Theology). Doctoral and/or masters programs are also offered by many departments, further enriching the research and educational activities of the college.

The bachelor of arts and the bachelor of science college curriculum requirements expose students to the major disciplines as well as the knowledge areas of rhetoric, foreign languages, mathematical reasoning, English and foreign literatures, science and nature, histories of cultures and societies, individual and social behavior, philosophy and theology.

Specialization in one or more of our majors or minors delivers technical skills and competencies on which to prepare for one's life-work. Students will have the opportunity to study with the award-winning teacher/scholars in the classroom and laboratory; engage in state-of-the-art research through undergraduate research opportunities; participate in extracurricular activities offered by a wide variety of student organizations; grapple with contemporary issues through programs offered by the Center for Ethics, the Center for Peacemaking, or the Center for Translational Justice and use their academic knowledge to interact with the community and to benefit it.

Arts and Sciences students may also wish to apply to the Honors Program (p. 40) which serves a select group of academically talented students from all divisions of the university. Participants in the program are provided with distinctively challenging and enriching learning experiences.

Students in the Klingler College of Arts and Sciences are encouraged to incorporate service learning and international study with their curriculum at Marquette. These opportunities challenge students to find new ways to engage the community and the world with their liberal education. Study abroad (p. 49) programs, in particular, offer students an opportunity to integrate academic course work with firsthand knowledge of other cultures.

Taken altogether, the programs and education provided by the Klingler College of Arts and Sciences embodies the values of Marquette's mission — excellence, faith, leadership and service. In this way the college seeks to develop students who have the ability and desire to work effectively for a more just and more humane society.

## Degrees Offered

### Degrees Offered

Marquette University confers the degrees of Bachelor of Arts in the humanities and social sciences, and Bachelor of Science in the natural sciences, mathematics and computer science on those students who have satisfactorily completed one of the regularly prescribed programs in the Klingler College of Arts and Sciences.

A student holding a bachelor's degree in one discipline may be admitted for work toward a bachelor's degree in another discipline, with approval from the college office (bachelor of arts to bachelor of science or vice versa). This option is useful for a student who wishes to change his or her field of concentration for graduate or professional study.

A candidate for a second baccalaureate degree must complete at least 32 additional upper division credits in residence and satisfy all current degree requirements. Students should see the university section of this bulletin for second degree requirements and procedures.

# Majors and Minors Offered

## Majors And Minors By Departments

### DEPARTMENT OF BIOLOGICAL SCIENCES

**Majors:**

- Biological Sciences
- Biology for the Professions (Available only to College of Education students)
- Physiological Sciences
- Physiological Sciences: Physical Therapy Track (Available only to students admitted into Physical Therapy)
- Biochemistry and Molecular Biology

**Minor:**

- Biological Sciences

### DEPARTMENT OF CHEMISTRY

**Majors:**

- Chemistry
- Chemistry for the Professions (Available only to College of Education students)
- Biochemistry and Molecular Biology

**Minor:**

- Chemistry

### DEPARTMENT OF ECONOMICS

**Major:**

- Economics

**Minor:**

- Economics

### DEPARTMENT OF ENGLISH

**Majors:**

- Literature
- Writing-Intensive English

**Minors:**

- Literature
- Literatures of Diverse Cultures
- Writing-Intensive English

#### **DEPARTMENT OF FOREIGN LANGUAGES AND LITERATURES**

##### **Majors:**

- Classical Languages
- Classical Studies
- French
- German
- Spanish Language, Literature and Culture
- Spanish for the Professions

##### **Minors:**

- Classical Languages
- Classical Studies
- French
- German
- Spanish Language, Literature and Culture
- Spanish for the Professions

#### **DEPARTMENT OF HISTORY**

##### **Majors:**

- History
- American Military History

##### **Minor:**

- History

#### **DEPARTMENT OF MATHEMATICS, STATISTICS AND COMPUTER SCIENCE**

##### **Majors:**

- Mathematics
- Mathematics for Elementary School Teachers (Available only to College of Education students)
- Computer Science
- Computational Mathematics

**Minors:**

- Mathematics
- Computer Science
- Software Development

**DEPARTMENT OF PHILOSOPHY**

**Major:**

- Philosophy

**Minor:**

- Philosophy

**DEPARTMENT OF PHYSICS**

**Major:**

- Physics

**Minors:**

- Physics
- Astronomy
- Biophysics

**DEPARTMENT OF POLITICAL SCIENCE**

**Major:**

- Political Science

**Minor:**

- Political Science

**DEPARTMENT OF PSYCHOLOGY**

**Major:**

- Psychology

**Minor:**

- Psychology

**DEPARTMENT OF SOCIAL AND CULTURAL SCIENCES**

**Majors:**

- Anthropology (p. 326)

- Criminology and Law Studies (p. 329)
- Social Welfare and Justice (p. 334)
- Sociology (p. 331)

**Minors:**

- Anthropology
- Criminology and Law Studies
- Social Welfare and Justice
- Sociology

**DEPARTMENT OF THEOLOGY**

**Majors:**

- Theology
- Theology for Catholic School Ministry

**Minor:**

- Theology

**FINE ARTS**

(Cross-Registration Program with College of Communication and Milwaukee Institute of Art and Design)

**Minor:**

- Fine Arts

Fine Arts Concentrations:

- Graphic Design
- Motion Narrative
- Photography
- Studio Art

**RESERVE OFFICER'S TRAINING CORPS**

**Minors:**

- Air Force Aerospace Studies (p. 318)
- Military Science and Leadership (p. 320)
- Naval Science (p. 322)

**INTERDISCIPLINARY PROGRAMS**

**Majors:**



- Africana Studies (p. 231)
- Applied Mathematical Economics (p. 235)
- Broad Field Science (p. 237) (Available only to College of Education students)
- International Affairs (p. 241)
- Women's and Gender Studies (p. 251)

**Minors:**

- Africana Studies
- Asian Studies
- Broad Field Social Science (Available only to College of Education students)
- Catholic Studies
- Environmental Ethics
- Ethics
- Family Studies
- International Affairs
- Justice and Peace
- Medieval Studies
- Public History
- Urban Affairs
- Women's and Gender Studies

## Academic Regulations

### Academic Regulations and General Information

Students in the Klingler College of Arts and Sciences are expected to comply with the academic requirements and regulations listed in the university section of this bulletin and must fulfill the graduation requirements stated in the bulletin issued the year they entered Marquette. Students who have interrupted their enrollment for one or more years follow the requirements and regulations listed in the bulletin in effect during the academic year of their return. (Exception is made for students who interrupted enrollment to serve in the Armed Forces.)

It is the responsibility of students to know and fulfill all university, Klingler College of Arts and Sciences, and major department requirements.

While the principal policies and procedures of the college are contained in this section of the bulletin, questions concerning other regulations should be directed to the college or relevant department office.

### Academic Honesty

The Klingler College of Arts and Sciences adheres to the university policy on academic honesty (p. 56). We believe in prevention through education; accordingly, the faculty of the college takes measures to educate students about the foundational principles of academic integrity. Acts of academic dishonesty may include, but are not limited to, the following:

- Copying material from a Web page and submitting it as one's own work;
- Quoting extensively from a document without making proper references to the source;
- The illegitimate use of materials in any form during a quiz or examination;
- Copying answers from the quiz or examination paper of another student;
- Plagiarizing (submitting as one's own ideas the work of another) or falsifying materials or information used in the completion of any assignment which is graded or evaluated as the student's individual effort;
- Obtaining, through theft, bribery or collusion, or otherwise improperly securing, an examination paper prior to the time and date for the administration of the examination;
- Use of an examination paper previously administered (for example, during an earlier semester) without the consent of the instructor who authored the examination;
- Furnishing credentials that have been earned by another person, or falsifying records, transcripts or other academic papers in order to falsely present one's academic position;
- Impersonating a candidate at an examination or availing oneself of such an impersonation;
- Intentionally interfering with any person's scholastic work (e.g., by damaging or stealing laboratory experiments, computer files or library materials);
- Submitting the same work for more than one course without the consent of the instructors of each course in which the work is submitted;
- Aiding or abetting any such offenses.

In instances where academic dishonesty is suspected, instructors are responsible for initiating investigations into the alleged violation and students are responsible for cooperating fully with the

investigatory process. Students and faculty should refer to the Academic Honesty Policy in the university section of this bulletin for specific details.

If the college comes to know that a student has committed a substantiated act of academic dishonesty in a course offered by the college, and if that student withdraws from that course, the college will assign the student a grade of ADW for that course.

## **Absences from Final Examinations**

An Arts and Sciences student who misses a final examination in any course must contact their course instructor immediately. For more information, refer to the University Attendance Policy (p. 62) .

## **Advisers/Advising**

Upon entering the Klingler College of Arts and Sciences, a student is assigned a pre-major adviser. The student must consult with this adviser (or the Arts and Sciences Advising Center ([http://www.marquette.edu/as/advising\\_index.shtml](http://www.marquette.edu/as/advising_index.shtml))) at least once before registering for their first term and at least once every term thereafter.

Upon declaring a major, the student will be assigned a major adviser with whom the student must consult at least once each term before registering for classes. Students with more than one major are strongly encouraged to also consult with their second major advisers.

Advisers are available during each registration period as well as by appointment throughout the academic year.

Refer to the university section of the bulletin under Academic Regulations (p. 54) regarding Academic Advising: university's Advising Philosophy; Goals for Advising; and Adviser and Student Expectations.

## **Attendance**

Because absence from class will prevent a student from getting the full benefit of a course and because in many courses, each student's involvement contributes to the learning process for all other students in the class, the college has adopted the University Attendance Policy (p. ) for all of its undergraduate courses.

## **Background Checks, Drug Testing**

Some degrees, majors and/or courses may require a student to submit a criminal background check and/or drug testing. The results of those checks and/or tests may affect the student's eligibility to continue in that degree, major and/or course.

## **CD or D Grades**

Courses completed with a grade of CD or D do not count toward the total hour requirement for a major or minor but do fulfill the subject matter requirement and do count toward the total 128 credit hours required for graduation. Courses in which a CD or D grade was earned may be repeated. In such cases, only the grade earned in the repeated course will be counted in the cumulative grade point average, but both grades will appear on the official transcript; credit will be given only once. Cognate requirements can be completed at a CD or D grade.

## Credit Overload

Students may register for up to 20 credit hours in a fall or spring semester. Registering for more than 20 credits hours requires permission of the college office. To seek this permission, a student must fill out and hand in to the college office the Credit Overload Request form available at Marquette Central (<http://www.marquette.edu/mucentral/>).

The university will charge students a fee for each credit hour they are enrolled over and above 18 credit hours. Refer to the university section on Tuition, Fees and Housing (p. 102) in the bulletin.

## Elective Courses

Of the 128 credit hours required for a degree, those not fulfilling the University Core of Common Studies, College of Arts and Sciences B.A. or B.S. curriculum and major requirements are deemed electives. Courses in other divisions of the university may also be taken for elective credit.

## Independent Study (4995) Courses

Independent Study (4995) courses offer students the opportunity to engage with increased intensity the study of special topics under the supervision of a faculty member.

These courses may be used to grant students credit for serving as researchers in faculty labs or on faculty research projects when:

- The student is conducting independent research under the supervision of the faculty member.
- The type of work done by the student clearly advances his/her educational objectives.

Faculty and students arranging an Independent Study course must adhere to the following guidelines for all 4995 courses:

1. These courses are intended for students conducting independent research or interpreting or analyzing research data, under the supervision of a faculty member. (A 4995 course is not to be used to grant a student credit for serving merely as a lab assistant or for awarding credit for an internship.)
2. All 4995 courses must be described by a complete syllabus or written course or project plan that contains a clearly articulated set of instructional goals and a detailed plan for assessing whether those goals are achieved.
3. The syllabus must also include a calendar of meetings between faculty and student (including dates and times), the dates for assignment deadlines, as well as assessment and grading methods (including percentages of the total grade represented by each assignment, exam or research paper).
4. The course must include a culminating writing or research project reflecting the knowledge gained in the course.
5. All 4995 courses must include face-to-face meetings with faculty, in addition to individual reading and research. Distance learning is not acceptable for 4995 courses.
6. These courses are available only to juniors and seniors (exceptions will be granted only in extraordinary circumstances and must be approved by the department chairperson and the associate dean of the college).
7. A 4995 course is available only to a student who has declared a major or minor in the subject area of the course proposed, and who has completed at least 12 credit hours in that department.

8. These courses are not to be used as substitutes for regularly scheduled courses or for fulfillment of requirement of either the University Core of Common Studies or the Klingler College of Arts and Sciences B.A. or B.S. Curriculum.
9. All 4995 courses are to be taught only by regular full-time faculty. If this is not the case (for example, where a student's work is done in a laboratory off campus), departments proposing 4995 credit must ensure academic quality by providing secondary student mentoring by a Marquette faculty member, by requiring a plan for the proposed research, and by requiring a written record of the research results.
10. Departments may establish the maximum number of credit hours earned in 4995 courses which may be applied to a major or minor.
11. Departments may also establish a minimum grade point average for enrollment in 4995 courses (3.000 is recommended), as well as additional guidelines as appropriate.

The deadline for approval of 4995 courses by department chairpersons is the close of late registration for the session in which the course is to be offered. Refer to the Academic Calendar (<https://bulletin.marquette.edu/undergrad/academiccalendar/>) for deadlines. Late requests for 4995's must be approved by the associate dean of the college and will be granted only in unusual circumstances.

## Majors and Minors

Candidates for degrees are required to complete a major. Formal declaration of the major should be filed in the appropriate departmental office, usually during the sophomore year.

A minor is not required but is offered in most disciplines and some interdisciplinary fields. Students pursuing a minor must complete a declaration of minor form found on the Marquette Central (<http://www.marquette.edu/mucentral/>) website. Once completed, the form must be turned in to the student's college records office.

The number of credit hours required for various majors and optional minors is listed in the departmental sections of the bulletin.

Overlap Limit: Where applicable, the college allows up to two courses (6-8 credit hours) of overlap between any combination of two programs (majors or minors) that a student is pursuing in the college. At least 15 credit hours in the major and nine credit hours in the minor must be completed at Marquette.

- Interdisciplinary Majors and Minors (p. 230)

The Klingler College of Arts and Sciences is committed to the fundamental goal of integrating diverse areas of learning into a coherent whole. This integration lies at the heart of the liberal arts education provided at Marquette University. Achieving this goal involves two steps. First, as part of the college curriculum, students are required to study material from the wide variety of disciplines comprising the arts and sciences. Second, by majoring and perhaps minoring in a specific discipline of their choice, students pursue learning in more depth and are then challenged to integrate this into their broader understanding of the world acquired through the college curriculum. For students whose interests go beyond the boundaries of traditional disciplines, the college offers the interdisciplinary majors and minors listed in the college section - Interdisciplinary Majors and Minors.

- Individualized Interdisciplinary Majors and Minors

In addition, students for whom particular interests may be better served by a flexible grouping of courses from several areas can create an individualized interdisciplinary major or minor. Examples of such self-designed majors or minors include Arabic Studies, Italian Studies and Peace Studies. Students should consult the college office in order to be referred to a faculty adviser in their area of interest. With this adviser, the student will write a proposal explaining the relationship between educational objectives and the choice of an interdisciplinary major or minor, a list of courses to be

included, and the sequence in which they will be taken. Such proposals, as well as any subsequent modifications, must be approved by the college's associate dean.

- Professional Minors

Professional minors are available in advertising (College of Communication), business administration, human resources management, information technology, and marketing (College of Business Administration), biomedical sciences (College of Health Sciences) and health studies (College of Nursing). See the appropriate sections of this bulletin for information.

## **Requirement to Withdraw for Academic Reasons**

Students admitted to the Klingler College of Arts and Sciences are expected to meet college academic standards and maintain good academic standing. Academic performance is monitored carefully by the Committee on Scholastic Actions, and students either not maintaining steady progress or not demonstrating adequate achievement will be required to withdraw from the college.

The bases for committee review are quality point deficiency, inadequate progress, grades of I, IX, X, W, WA, UW or ADW, the number of semesters on college probation or required to withdraw, and the violation of special conditions. Special conditions may be prescribed in writing at the time of the student's admission, readmission or transfer into the college. Conditions may also be prescribed in writing in the case of a student whose course performance or failure to follow academic advice warrants such action. All students to whom conditions have been specified will be subject to committee review and academic dismissal should they fail to fulfill the specified terms.

It is possible that a student be dismissed for academic reasons even though the student's cumulative GPA exceeds 2.000. Students concerned about their academic progress should consult the college office. Students required to withdraw for academic reasons will be notified by letter or e-mail of the committee's decision and of the appeal process.

## **Transfer Credit Policy**

In accordance with the University Transfer Credit Policy, the Klingler College of Arts and Sciences will grant credit for courses taken for a grade and completed at a C or better at a regionally accredited college or university. Only credit will transfer, not grades. Courses completed in a quarter-hour system will be converted to semester credits, therefore reducing the total credits accepted by one-third. A Marquette equivalent will be specified for each transferable course. Courses awarded as 9290-9299, (lower division) or 9390-9399 (upper division) indicate transferable credit for which there is no discernible Marquette equivalent. Courses awarded as 9290-9299 or 9390-9399 will count toward the degree and may fulfill UCCS, college curriculum or major/minor requirements; however, they will not fulfill any requirement where a specific course number (i.e. PHIL 1001 Philosophy of Human Nature or THEO 1001 Introduction to Theology) has been indicated. Contact the director of student records with any questions or concerns regarding transfer of credit.

# Graduation Requirements

Undergraduate students must meet the graduation requirements, which are stated in the Undergraduate Bulletin issued for the year in which they entered Marquette. Substitutions or waivers for specific courses required for degree completion may occur, as determined by the Klingler College of Arts and Sciences.

Students whose enrollment is interrupted for two or more consecutive terms normally must meet the requirements in the bulletin issued for the year in which they return to the university. The college may determine that a readmitted student will fall under a different set of degree requirements than the academic year in which he/she is readmitted.

It is the student's responsibility to know and fulfill the requirements for graduation specified for the selected plan.

A candidate for a baccalaureate degree must meet the following graduation requirements to earn a Marquette undergraduate degree:

## Grade Point

- Earn a minimum grade point average of 2.000 for graduation (256 grade points).
- Achieve a 2.000 grade point average in all courses in his/her major or minor.

## Credit Hours

- Earn 128 credit hours.
- Complete a minimum of 60 Marquette credits.
- Complete the final 30 credit hours needed with Marquette credits, unless those credits are earned in an approved study abroad program.
- For B.S. degree: Complete a minimum of 32 credit hours in upper-division Marquette courses (lower-division courses are numbered 1000 to 2999; upper-division courses are numbered 3000 and above).
- For B.A. degree: Complete a minimum of 42 credit hours in upper-division courses, ten of these credits may be non-Marquette credits (lower-division courses are numbered 1000 to 2999; upper-division courses are numbered 3000 and above).
- Earn a minimum of 15 Marquette credit hours in the major (for a minor, a minimum of 9 credits must be Marquette credits).

## University Core of Common Studies

- Fulfill the requirements in the nine knowledge areas for the University Core of Common Studies.

## College Curriculum

- Fulfill the Bachelor of Arts or the Bachelor of Science College Curriculum requirements for their degree.

- Fulfill all of the requirements for at least one major offered in the Klingler College of Arts and Sciences.
- Be in good academic standing in the College.

## **Other Requirements for Graduation**

- File a formal application for graduation at the college record's office by the last day of advising week in the term prior to the term of graduation (November for May and August graduates; March for December graduates).
- May graduates must attend Commencement exercises. Permission to be absent may be requested only for serious reasons by writing to the dean of the college by May 1.

Although most students can fulfill the University Core requirements, the College Curriculum and major requirements and take elective courses within 128 credits, certain combinations of major and minor fields may require more than the minimum. Students are urged, therefore, to consult an adviser before selecting a major and an optional minor.

*It is the responsibility of students to know and to fulfill all university, Klingler College of Arts and Sciences and major department requirements (See the corresponding sections of this bulletin for additional information regarding the University Core of Common Studies, university graduation and residency requirements, College Curriculum requirements and department major and minor requirements).*



# College Curriculum Requirements

The Klingler College of Arts and Sciences builds on the University Core of Common Studies through College Curricula for the bachelor of arts and the bachelor of science degrees that integrates traditional Jesuit principles and educational structures with the demands of an increasingly globalized and rapidly changing world.

The Arts and Sciences Curricula are organized around these essential components:

- The development of fundamental skills of critical inquiry, analysis and expression.
- The development of appreciation for the spiritual and creative dimensions of human life and culture.
- The development of a responsible commitment to the broader social and political communities in which they live.

The College Curriculum challenges students to embrace, to understand and to engage actively in the complexities of the world in which they live. Courses drawn from the different disciplines within the humanities, natural sciences and social sciences provide different perspectives and multiple methods of inquiry. The curriculum serves as the foundation for students' intellectual growth as they pursue their majors and professional disciplines, and as they develop into men and women who will dedicate their lives to the service of others.

## Rhetoric

The study of Rhetoric prepares students for written and oral engagement not only with the academic work ahead of them but with the multiple literacies of a complex world in which globalization both connects and separates us in unprecedented ways. Students learn to communicate clearly and persuasively by developing their critical reading, writing, speaking, listening and thinking skills. Students develop the ability to establish an authoritative ethos, to consider their own positions in relation to those of their audiences, and to treat opposing views fairly. They learn to consider how their language—spoken and written, heard and read—is shaped by and may shape the intentions and actions of others. As a result, they learn how to express ideas, values and beliefs persuasively in a variety of academic contexts as well as in life beyond the university. Thus, the study of Rhetoric offers students ways of understanding the world and acting within their communities, via language, for the greater good of all.

Students will be able to:

- Use the strategies of exposition, analysis, argument, evaluation and interpretation to analyze and compose texts.
- Produce well-organized, well-reasoned and well-supported written, visual and oral texts, given diverse purposes, multiple genres and a variety of audiences and contexts (e.g., thesis-support academic essays, open form essays for public audiences, business documents, oral presentations).
- Explain the importance of ethics in academic, civic and professional applications of rhetoric.

## Foreign Languages

The study of languages is the starting point for exploration and understanding of diverse cultures and traditions. Contacts between cultures happen in our own lives every day, and more often than ever before, knowing a second language is essential for being part of a society that reaches around the world. Our language programs in Arabic, Chinese, French, German, Italian, Japanese and Spanish prepare students to interact effectively and engage other people and cultures face-to-face in the most human way possible. Students of Classical languages encounter Greek and Roman civilization as something that is very much a living part of our culture today (philosophy, theatre, poetry, medicine, politics and much more).

Students will be able to:

- Converse with ease and confidence when dealing with most routine tasks and social situations.
- Handle successfully many uncomplicated tasks and social situations related to work, school, recreation and personal interests.
- Begin to narrate and describe in the past, present and future time frames.
- Begin to describe how culture shapes and sustains identity, society and tradition.

## **Histories of Cultures and Societies**

History illuminates every aspect of the human experience -- politics, economics, religion, social issues, art and war. Consequently, the introductory history courses that are part of the college curriculum help students begin to understand society in a comprehensive way. The study of history mines the storehouse of information about the past and orders that knowledge in logical and meaningful ways. It thus shapes our human memory and so equips us to think critically and constructively about the present and our connections to the past.

Students will be able to:

- Demonstrate an understanding of the discipline of history, in particular the application of historical methodologies in the formulation of plausible interpretations of human behavior in past centuries.
- Demonstrate an understanding of how societies develop over centuries through the complex interaction of socio-economic, political, religious and other cultural forces including historical memories constructed by successive generations.
- Demonstrate an understanding of continuities and differences between the past and the present.

## **Individual and Social Behavior**

Anthropology, Criminology, Economics, Political Science, Psychology, Social Welfare and Justice, Sociology

Studying individual and social behavior helps us to understand ourselves and the societies in which we live. Self-identity is constructed through a dynamic interplay of social interactions and societal structures. In turn, societies are similarly influenced by individual behaviors and attitudes, creating evolving forces that continually influence individuals. Each domain of the social sciences brings unique perspectives and contributions to the study of and interventions into individual and social behaviors that inform the others.

Students will be able to:

- Understand central concepts, theories and methods used to explain individual and social behavior in one of the social and cultural disciplines.
- Use knowledge of quantitative and qualitative scientific methods to analyze examples of individual and social behavior.
- Evaluate the applicability of scientific knowledge for understanding individual and social behavior in particular contexts.

## **Literature**

The study of literature in English, a foreign language or in English translation allows a student to explore the global diversity of literary forms and genres, of understanding the importance of language, imagination and creation. It promotes an appreciation for how literary and cultural texts can transform

one's understanding of self, others and communities. Through exposure to different methods of interpreting texts, students develop critical thinking skills, which are applicable to every aspect of their lives.

Students will be able to:

- Produce oral and written assessments of literary and cultural texts using the language and concepts of this discipline.
- Articulate how literary and cultural texts can transform one's understanding of self, others and communities.
- Apply the methodologies of literary criticism to representative works of literature.

## Mathematical Reasoning

Mathematical and quantitative reasoning skills are essential to being an effective problem solver. This knowledge allows one to think logically by using mathematical and quantitative principles to evaluate and solve problems, as well as to predict possible outcomes and solutions to questions in everyday life.

Students will be able to:

- Evaluate the effectiveness of the mathematical sciences in describing the world.
- Analyze quantitative information symbolically, graphically, numerically and verbally for the purpose of solving problems or drawing conclusions.
- Construct logical arguments in support of mathematical assertions.

## Philosophy

Philosophy strives to integrate the understanding of all aspects of life into a coherent, rational whole. As such, it plays a crucial role in the "education of the whole person." Philosophy as an investigation of the enduring questions facing humanity -- What is the human being?, What should the human being do?, What is the relationship of the human being to the world around him/herself? and What is the relationship of the human being to the transcendent? -- enables the student to be reflective about his/her life. Philosophy enhances analytical, critical and interpretive capacities that are applicable to any subject-matter and in any human context, and cultivates the capacities and appetite for self-expression and reflection, for exchange and debate of ideas, for life-long learning and for dealing with problems for which there are no easy answers.

Students will be able to:

- Assess views of human nature in various philosophical traditions, including classic Greek and Catholic philosophical traditions.
- Argue for one of the major ethical theories over another in terms of philosophical cogency and practical outcome.
- Use philosophical reasoning to develop their own position on central issues in human nature and ethics, for example; the relation between mind and body, the problem of freedom and determinism, the spiritual and affective dimensions of human life, the extent of human knowledge, the justification of moral judgments and the elucidation of moral norms.

## Science and Nature

The study of science and nature through the disciplines of Biology, Chemistry or Physics provides students with an understanding of the processes, limitations and ethics of scientific inquiry. Knowledge of the fundamental concepts, tools and methodologies is essential in today's science and technology

driven society. The use of scientific inquiry to evaluate and interpret information will help non-science majors contribute to the solution of complex societal problems, such as: promoting and maintaining a sustainable planet and understanding the prevention and treatment of illnesses.

Students will be able to:

- Demonstrate knowledge of major concepts, tools and methodologies in one of the natural sciences.
- Understand processes, limitations and ethics of scientific inquiry.
- Use scientific inquiry to solve problems and evaluate information.

## Theology

The study of Theology increases the student's awareness of the mystery and religious dimensions of human life. It enables the discernment of the perennially significant in the complexity and conflicting values of modern life, "men and women for others," intellectually prepared to "find God in all things." The aim of a theological foundation is to encourage students to become responsible citizens drawn to the intellectual life, knowledgeable about their own religious traditions and appreciative of the religious beliefs and practices of others in the human community.

The three-course-sequence begins with THEO 1001 Introduction to Theology, which introduces key sources and questions of theology at the same time that it provides the student with a necessary knowledge base. Second-level courses have the objective of exploring theological texts and developing the skills to understand representations of God, the religious community and the human person. Third-level courses investigate particular theological topics with discipline-specific methods and develop in students the critical habit of seeing into the depth-dimension of reality in light of religious faith and its historical effects on human societies. Third-level offerings also include interdisciplinary courses to investigate theological questions, courses that focus on a particular persons, time period or topic; courses that examine the impact of religion on our daily lives; and courses that explore non-Christian religious traditions.

Students will be able to:

- Describe theologically the basic content of the Catholic faith in relation to other Christian and religious traditions as well as other worldviews.
- Interpret theological texts and frameworks in their historical contexts.
- Articulate implications of Christian faith for growth in holiness and promotion of justice in the contemporary world.

## Bachelor of Arts Degree Requirements

The **Bachelor of Arts** degree is awarded to students of the Klingler College of Arts and Sciences in the following majors:

- Africana Studies
- Anthropology
- Classical Languages
- Classical Studies
- Criminology and Law Studies
- Economics
- English Literature
- Writing-Intensive English
- French
- German
- History
- American Military History
- International Affairs
- Mathematics for Elementary School Teachers
- Philosophy
- Political Science
- Psychology
- Social Welfare and Justice
- Sociology
- Spanish Language, Literature and Culture
- Spanish for the Professions
- Theology
- Theology for Catholic School Ministry
- Women's and Gender Studies

## Bachelor of Arts College Curriculum

A minimum of 42 credit hours in upper-division courses must be completed for the B.A. degree. Thirty-two upper-division credits must be completed at Marquette (lower-division courses are numbered 1000 to 2999; upper-division courses are numbered 3000 and above).

All candidates for a Bachelor of Arts degree in the Klingler College of Arts and Sciences must complete the following requirements of the College Curriculum:

| Area                                | Credit Hours |
|-------------------------------------|--------------|
| Rhetoric                            | 6            |
| Foreign Language                    | 0-14         |
| Histories of Cultures and Societies | 6            |
| Individual and Social Behavior      | 9            |
| Literature                          | 6            |
| Mathematical Reasoning              | 6            |
| Science and Nature                  | 6-8          |
| Philosophy                          | 9            |
| Theology                            | 9            |

## Rhetoric Requirement

Students must complete ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2. Non-native speakers of English are required to take a placement test at Marquette during orientation. The completion of ENGL 1001 and ENGL 1002 fulfills the Rhetoric requirement in the University Core of Common Studies.

## Foreign Language Requirement

Students must demonstrate competency in a foreign language. The foreign language requirement may be completed with 0 to 4 courses in the language. The number of credit hours to be completed may vary from 0 to 14, depending on the student's proficiency and level of placement.

Students coming to Marquette University directly from high school are advised to begin language study in their freshman year so that they continue to build upon their level of proficiency.

For detailed information on placement in foreign language courses and special placement credit, see the corresponding sections in the University section of this bulletin and the Department of Foreign Languages and Literatures.

- Students who wish to study French, German or Spanish as a new language may complete the requirement with three to four courses of the same language.
- Students who earn an AB or better in FREN 1002 Elementary French 2, GRMN 1002 Elementary German 2 or SPAN 1002 Elementary Spanish 2 or SPAN 1003 Intensive Elementary Spanish may complete the requirement with FREN 2003 Intensive Intermediate French, GRMN 2003 Intensive Intermediate German or SPAN 2003 Intensive Intermediate Spanish in place of FREN 2001 Intermediate French 1 and FREN 2002 Intermediate French 2, GRMN 2001 Intermediate German 1 and GRMN 2002 Intermediate German 2 or SPAN 2001 Intermediate Spanish 1 and SPAN 2002 Intermediate Spanish 2.
- Students who are placed in SPAN 1003 Intensive Elementary Spanish may complete the requirement by taking SPAN 1003 Intensive Elementary Spanish, SPAN 2001 Intermediate Spanish 1 and SPAN 2002 Intermediate Spanish 2 or SPAN 1003 Intensive Elementary Spanish and SPAN 2003 Intensive Intermediate Spanish (if the student has earned an AB or better in SPAN 1003).

- For students who wish to study Arabic, Chinese, Classical Greek, Italian, Japanese or Latin as a new language, only the four-course sequence (Elementary Language 1001 and 1002 and Intermediate Language 2001 and 2002) is available.

## **Histories of Cultures and Societies Requirement**

Students are required to complete either HIST 1001 Growth of Western Civilization to 1715 or HIST 1002 Growth of Western Civilization since 1715 and at least one additional course from among the following: HIST 1001 Growth of Western Civilization to 1715, HIST 1002 Growth of Western Civilization since 1715, HIST 1101 Introduction to American History, HIST 1301 Survey of Latin America, HIST 1401 Africa or HIST 1501 East Asia. The completion of any of these courses fulfills the Histories of Cultures and Societies requirement in the University Core of Common Studies.

## **Individual and Social Behavior Requirement**

Students may select any three courses from the departments of Economics, Political Science, Psychology or Social and Cultural Sciences (Anthropology, Criminology, Social Welfare and Justice and Sociology). Courses from at least two of these departments must be represented among the nine hours.

One of the courses taken to fulfill this requirement may be chosen from among those courses offered by a department of the college and included on the list of courses fulfilling the Individual and Social Behavior requirement in the University Core of Common Studies.

## **Literature Requirement**

Students must complete six credit hours in literature, either in English or Foreign Languages and Literatures (original language or translation). One of these courses may be an English (ENGL) course or a Foreign Languages and Literatures (CLAS, FREN, GRMN, ITAL, JPNS, LATN, SPAN) course included on the list of courses fulfilling the Literature/Performing Arts requirement in the University Core of Common Studies.

## **Mathematical Reasoning**

This requirement may be completed by taking any two courses in mathematics, computer science, statistics or logic, *except* for a combination of two logic ( PHIL 1000 Logic, PHIL 4000 Modern Logic) or two statistics

( MATH 1700 Modern Elementary Statistics, MATH 4720 Statistical Methods, PSYC 2001 Psychological Measurements and Statistics, SOCI 2060 Social Statistics) courses. MATH 105, MATH 1100 College Algebra and MATH 1101 Trigonometry and Analytic Geometry do not fulfill this requirement.

One of the courses taken to fulfill this requirement may be chosen from among those courses offered by a department of the college and included on the list of courses fulfilling the Mathematical Reasoning requirement in the University Core of Common Studies.

## **Science and Nature Requirement**

Students must complete two courses. Courses in BIOL, CHEM and PHYS can be used to fulfill this requirement. ARSC 1020 Major Concepts in Modern Science 1 and ARSC 1021 Major Concepts in Modern Science 2 may be used to fulfill this requirement. Only one anthropology course may be used to fulfill this requirement and it cannot also fulfill part of the Individual and Social Behavior requirement. One of the courses taken to fulfill the Science and Nature requirement in the college curriculum may be chosen from among those courses offered by a department of the college and included on the list of courses fulfilling the Science and Nature requirement in the University Core of Common Studies.

## Philosophy Requirement

Students are required to complete PHIL 1001 Philosophy of Human Nature, PHIL 2310 Theory of Ethics and one other upper division (3000 or higher) philosophy course. The completion of PHIL 1001 and PHIL 2310 fulfills the Human Nature and Ethics requirement in the University Core of Common Studies.

## Theology Requirement

Students must complete nine credit hours of theology: THEO 1001 Introduction to Theology, one second-level Theology course (a 2000-level course) and one third-level Theology course (a 4000-level course), in that sequence. THEO 1001 counts toward fulfillment of the Theology requirement in the University Core of Common Studies. The second-level course taken to fulfill the Theology requirement in the college curriculum may be chosen from among those courses listed as fulfilling the Theology requirement in the University Core of Common Studies.

Note that not all UCCS-approved courses fulfill the Arts and Sciences college curriculum requirements. (For example, for the UCCS, a student may take ENGL 1001 Rhetoric and Composition 1 and COMM 1100 Contemporary Presentation, but for the Arts and Sciences College Curriculum, ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2 are required.)

Similarly, not all Arts and Sciences college curriculum requirements fulfill the UCCS. Students should cross check the UCCS-approved course list with the Arts and Sciences college curriculum requirements to know whether a course fulfills requirements in both the UCCS and the College curriculum. Note, too, that college curriculum requirements also may fulfill major/minor requirements and vice versa, but a course can fulfill only one College Curriculum requirement.



## Bachelor of Science Degree Requirements

The **Bachelor of Science** degree is awarded to students of the Klingler College of Arts and Sciences in the following majors:

- Applied Mathematical Economics
- Biological Sciences
- Physiological Sciences
- Biochemistry and Molecular Biology
- Chemistry
- Mathematics
- Computer Science
- Computational Mathematics
- Physics

**The Second Majors listed below are available only to students in the College of Education:**

- Biology for the Professions
- Broad Field Science
- Chemistry for the Professions

## Bachelor of Science College Curriculum

A minimum of 32 credit hours in upper-division Marquette courses must be completed for the B.S. degree (lower-division courses are numbered 1000 to 2999; upper-division courses are numbered 3000 and above).

All candidates for a Bachelor of Science degree in the Klingler College of Arts and Sciences must complete the following requirements in the College Curriculum:

| Area                                      | Credit Hours |
|---|--------------|
| Rhetoric                                  | 6            |
| Foreign Language                          | 0-8          |
| Histories of Cultures and Societies       | 3            |
| Individual and Social Behavior            | 3            |
| History or Individual and Social Behavior | 3            |
| Literature                                | 6            |
| Mathematical Reasoning                    | 6            |
| Science and Nature                        | 6-8          |
| Philosophy                                | 9            |
| Theology                                  | 9            |

Students who switch from a B.S. program to a B.A. program will be required to complete the curriculum requirements for the B.A. degree.

## Rhetoric Requirement

Students must complete ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2. Non-native speakers of English are required to take a placement test at Marquette during orientation. The completion of ENGL 1001 and 1002 fulfills the Rhetoric requirement in the University Core of Common Studies.

## Foreign Language Requirement

Students must demonstrate competency in a foreign language. The number of credit hours to be completed may vary from 0-8, depending on the student's proficiency and degree program.

Students coming to Marquette University directly from high school are advised to begin language study in their freshman year so that they continue to build upon their level of proficiency.

For detailed information on placement in foreign language courses and special placement credit, see the corresponding sections in the university section of this bulletin and the Department of Foreign Languages and Literatures.

The foreign language requirement for students enrolled in B.S. degree programs may be completed with 0 to 2 courses in the language. The number of credit hours to be completed may vary from 0 to 8, depending on the student's proficiency and level of placement.

- Students who wish to study Arabic, Chinese, French, German, Classical Greek, Italian, Japanese, Latin or Spanish as a new language may complete the requirement with two courses of the same language (Elementary Language 1001 and 1002).
- Students may complete the Foreign Language Placement Exam. On the basis of their achieved score, they will be placed in the appropriate language course.
- Students who are placed in SPAN1003 Intensive Elementary Spanish may complete the requirement with one course (SPAN 1003).

- Students who are placed at the Intermediate Language level (2001 or 2003) or at a higher level, are exempt from the foreign language requirement.

## **Histories of Cultures and Societies Requirement**

Students are required to complete either HIST 1001 Growth of Western Civilization to 1715 or HIST 1002 Growth of Western Civilization since 1715.

## **Individual and Social Behavior Requirement**

Students are required to complete one course in an individual or social behavior science listed in the departments of economics, political science, psychology or social and cultural sciences (anthropology, criminology, social welfare and justice and sociology).

One of the courses taken to fulfill this requirement may be chosen from among those courses offered by a department of the college and included on the list of courses fulfilling the Individual and Social Behavior requirement in the University Core of Common Studies.

## **History or Individual and Social Behavior Requirement**

Students in the B.S. are required to complete either a second course offered by the History Department or a second course in the area of individual or social behavior.

## **Literature Requirement**

Students must complete six hours in literature, either in English or Foreign Languages and Literatures (original language or translation). One of these courses may be an English (ENGL) or Foreign Languages and Literatures (CLAS, FREN, GRMN, ITAL, JPNS, LATN, SPAN) course included on the list of courses fulfilling the Literature/Performing Arts requirement in the University Core of Common Studies.

## **Mathematical Reasoning Requirement**

Students may complete this requirement by taking any two courses in mathematics, computer science or statistics courses, *except* for a combination of two statistics courses ( MATH 1700 Modern Elementary Statistics, MATH 4720 Statistical Methods, PSYC 2001 Psychological Measurements and Statistics, SOCI 2060 Social Statistics). MATH 105, MATH 1100 College Algebra and MATH 1101 Trigonometry and Analytic Geometry do not fulfill this requirement.

One of the courses taken to fulfill this requirement may be chosen from among those courses offered by a department of the college and included on the list of courses fulfilling the Mathematical Reasoning requirement in the University Core of Common Studies.

## **Science and Nature Requirement**

Students must complete two courses. Courses in BIOL, CHEM and PHYS can be used to fulfill this requirement. ARSC 1020 Major Concepts in Modern Science 1 and ARSC 1021 Major Concepts in Modern Science 2 may be used to fulfill this requirement. Only one anthropology course may be used to fulfill this requirement, and it cannot also fulfill part of the Individual and Social Behavior requirement. One of the courses taken to fulfill the Science and Nature requirement in the college curriculum may be chosen from among those courses offered by a department of the college and included on the list of courses fulfilling the Science and Nature requirement in the University Core of Common Studies.

## **Philosophy Requirement**

Students are required to complete PHIL 1001 Philosophy of Human Nature, PHIL 2310 Theory of Ethics and one other upper division (3000 or higher) philosophy course. The completion of PHIL 1001 and 2310 fulfills the Human Nature and Ethics requirement in the University Core of Common Studies.

## Theology Requirement

Students must complete nine hours of theology: THEO 1001 Introduction to Theology, one second-level Theology course (a 2000-level course) and one third-level Theology course (a 4000-level course), in that sequence. THEO 1001 counts toward fulfillment of the Theology requirement in the University Core of Common Studies. The second-level course taken to fulfill the Theology requirement in the college curriculum may be chosen from among those courses listed as fulfilling the Theology requirement in the University Core of Common Studies.

Note that not all UCCS-approved courses fulfill the Arts and Sciences college curriculum requirements. (For example, for the UCCS, a student may take ENGL 1001 Rhetoric and Composition 1 and COMM 1100 Contemporary Presentation, but for the Arts and Sciences College Curriculum, ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2 are required.)

Similarly, not all Arts and Sciences college curriculum requirements fulfill the UCCS. Students should cross check the UCCS-approved course list with the Arts and Sciences College Curriculum requirements to know whether a course fulfills requirements in both the UCCS and the college curriculum. Note, too, that college curriculum requirements also may fulfill major/minor requirements and vice versa, but a course can fulfill only one college curriculum requirement.

# Pre-Professional Studies

## Pre-professional Studies and Scholars Programs

The Office of Pre-Professional Studies, sponsored by the Klingler College of Arts and Sciences, provides advice and service to students who wish to enter dental, law, medical or other health-related professional schools. Interested students should register with the Office of Pre-Professional Studies, Marquette Hall, Room 208.

### Pre-dentistry

#### Course Requirements

The requirements for dental schools typically include:

| Area              | Credit Hours |
|-------------------|--------------|
| Biology           | 8-12         |
| English           | 6            |
| General Chemistry | 8            |
| Organic Chemistry | 8            |
| Physics           | 8            |

All required courses in biology, chemistry, and physics must include laboratory work.

Generally, dental schools require a minimum of three years (90 semester hours) of undergraduate study.

For specific requirements of particular dental schools, refer to ADEA Official Guide to Dental Schools at ADEA.org (<http://www.adea.org/Pages/default.aspx>).

#### Dental Admission Test

All candidates for dental school must take the Dental Admission Test (DAT). This test is only offered in computerized form. Registration applications are available online at [ada.org](http://www.ada.org/) (<http://www.ada.org/>).

There are eight sections on the DAT, including quantitative reasoning, reading comprehension, biological sciences, general chemistry, organic chemistry, general sciences, perceptual ability and an overall academic average. Prior to taking the DAT, students should complete at least:

|              |   |   |
|--------------|---|---|
| BIOL 1001    | General Biology 1                               | 3 |
| BIOL 1002    | General Biology 2                               | 3 |
| BIOL 2001    | Principles of Biological Investigation          | 3 |
| BIOL 4101    | Biochemistry and the Molecular Basis of Biology | 3 |
| or BISC 3213 | Biochemistry                                    |   |

Most students take the DAT between June after their sophomore year and April of their junior year.

#### Application

Application is made through the American Association of Dental Schools Application Service (AADSAS). AADSAS applications are available online at [adea.org/aadsas \(http://www.adea.org/DENTAL\\_EDUCATION\\_PATHWAYS/AADSAS/Pages/default.aspx\)](http://www.adea.org/DENTAL_EDUCATION_PATHWAYS/AADSAS/Pages/default.aspx).

Timing of the dental school application is critical. Students need to apply 15 months before entering dental school. Most students apply in May of their junior year. Late applications will significantly affect students' chances of admission to dental school.

## **Pre-dental Scholars Program**

The Klingler College of Arts and Sciences participates in the Pre-dental Scholars Program. More detailed information can be found in the university Special Programs (p. 31) section of this bulletin.

## **Pre-law**

### **Course Requirements**

Law schools do not require specific college courses or majors. The Law School Admission Council recommends that students take rigorous and demanding courses that develop basic intellectual skills: reading, writing, and speaking, critical and logical thinking.

For information, see the pre-law adviser in the Office of Pre-Professional Studies, Marquette Hall, 208.

### **Law School Admission Test**

Almost all law schools require applicants to take the Law School Admission Test (LSAT). This test is offered four times a year, and should normally be taken at least one full year before entering law school.

### **Application**

Almost all law schools require applicants to register with the Law School Data Assembly Service (LSDAS). The majority of law school applicants apply online. Although deadlines vary from school to school, it is generally advantageous to complete applications early. Application occurs within one year in advance of desired entrance.

## **Pre-law Scholars Program**

The Klingler College of Arts and Sciences participates in the Pre-law Scholars Program. More detailed information can be found in the university Special Programs (p. 34) section of this bulletin.

## **Pre-medicine**

### **Course Requirements**

Although specific course requirements vary among medical schools, the common basic requirements are:

| Area              | Credit Hours |
|-------------------|--------------|
| Biology           | 8-12         |
| English           | 6            |
| General Chemistry | 8            |
| Organic Chemistry | 8            |
| Physics           | 8            |

All required courses in biology, chemistry and physics must include laboratory work.

For requirements of specific medical schools, refer to Medical School Admission Requirements: USA and Canada which is available in the Office of Pre-Professional Studies. Most U.S. medical schools require a minimum of 90 semester hours of undergraduate work and most give preference to students who finish a bachelor's degree before entering medical school. Preference in admission is not given to students with particular majors or academic concentrations.

### Medical College Admission Test

Medical schools require the Medical College Admission Test (MCAT). This computer-based test is administered multiple times between January–September. Registration is online at the Association of American Medical Colleges' website at [aamc.org](https://www.aamc.org) (<https://www.aamc.org/>).

The MCAT is divided into four sections: physical sciences, biological sciences, verbal reasoning and a writing sample. Before taking the MCAT, students should complete:

|              |   |   |
|--------------|---|---|
| CHEM 1001    | General Chemistry 1                             | 4 |
| CHEM 1002    | General Chemistry 2                             | 4 |
| CHEM 2111    | Organic Chemistry 1                             | 4 |
| CHEM 2112    | Organic Chemistry 2                             | 4 |
| BIOL 1001    | General Biology 1                               | 3 |
| BIOL 1002    | General Biology 2                               | 3 |
| BIOL 2001    | Principles of Biological Investigation          | 3 |
| BIOL 4101    | Biochemistry and the Molecular Basis of Biology | 3 |
| or BISC 3213 | Biochemistry                                    |   |
| PHYS 1001    | General Physics 1                               | 4 |
| or PHYS 1003 | General Physics with Introductory Calculus 1    |   |
| PHYS 1002    | General Physics 2                               | 4 |
| or PHYS 1004 | General Physics with Introductory Calculus 2    |   |

A physiology course is also recommended for the MCAT. Most students at Marquette take the MCAT in April or May of their junior year.

### Application

Application for most U.S. allopathic medical schools is made through the American Medical College Application Service (AMCAS). More information can be found at [aamc.org/amcas](https://www.aamc.org/amcas) (<https://www.aamc.org/amcas>). Students applying to U.S. osteopathic medical schools use

the American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS). More information can be found at [aacom.org](http://www.aacom.org) (<http://www.aacom.org/Pages/default.aspx>).

Timing of medical school applications is critical. Students need to apply 15 months before entering medical school. Most students apply in June of their junior year. Late applications will significantly affect students' chances of admission to medical school.



## Curricula Information

The following outline may be helpful in planning programs for majors in the humanities and social-behavioral sciences. However, this is only a suggested outline. Students should consult their academic advisers for variations. Students in special programs should also consult their program advisers. Students taking only the minimum number of hours each term will not accumulate sufficient hours for graduation in four years.

Outlines for the mathematics and science majors are listed in the respective department sections of this bulletin.

### Baccalaureate Degree Program Sequence

#### Typical Program for Bachelor of Arts Degree - Majors in the Humanities and Social-Behavioral Sciences

| Freshman                               |       |  |       |
|--|-------|--|-------|
| First Term                             | Hours | Second Term                            | Hours |
| ENGL 1001                              | 3     | ENGL 1002                              | 3     |
| History                                | 3     | History                                | 3     |
| Natural Science                        | 3-4   | Natural Science                        | 3-4   |
| Foreign Language                       | 3-4   | Foreign Language                       | 3-4   |
| Social-Behavioral Science              | 3     | Social-Behavioral Science or THEO 1001 | 3     |
|  | 15-17 |  | 15-17 |
| Sophomore                              |       |  |       |
| First Term                             | Hours | Second Term                            | Hours |
| Mathematics-Logic-Computer             | 3     | Mathematics-Logic-Computer             | 3     |
| Literature                             | 3     | Literature                             | 3     |
| Foreign Language or elective           | 3-4   | Foreign Language or elective           | 3     |
| PHIL 1001                              | 3     | Major or electives                     | 6     |
| Social-Behavioral Science or THEO 1001 | 3     |  |       |
|  | 15-16 |  | 15    |
| Junior                                 |       |  |       |
| First Term                             | Hours | Second Term                            | Hours |
| Diverse Cultures elective              | 3     | Philosophy (upper division)            | 3     |
| Theology (second level)                | 3     | Theology (third level)                 | 3     |

|                             |              |                           |              |
|-----------------------------|--------------|---------------------------|--------------|
| PHIL 2310                   | 3            | Major and electives       | 6-9          |
| Major and electives         | 6-9          | Social-Behavioral Science | 3            |
|                             | 15-18        |                           | 15-18        |
| <b>Senior</b>               |              |                           |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>        | <b>Hours</b> |
| Major and electives         | 12-15        | Major and electives       | 15-18        |
|                             | 12-15        |                           | 15-18        |
| Total credit hours: 117-134 |              |                           |              |

**Note:** A minimum of 128 credits is required for the degree.

## Biological Sciences

**Chairperson: Robert H. Fitts, Ph.D.**

Department of Biology website (<http://www.marquette.edu/biology/>)

Marquette University Department of Biological Sciences offers a B.S. degree in three majors: Biological Sciences, Biochemistry/Molecular Biology and Physiological Sciences. In addition, a track within Physiological Sciences for Direct-admit Physical Therapy (DPT) students allows these students to earn a B.S. degree after their 4th year, and students in the College of Education with a desire to teach high school biology can earn a B.S. degree with a second major, Biology for the Professions. The purpose of all of these degree programs is to provide instruction in the diverse disciplines that make up modern biology, including cell biology, genetics, physiology, neurobiology, biochemistry, molecular biology, ecology, microbiology and plant biology. A major emphasis of the department is to familiarize students to the practice of designing, performing and analyzing biological experiments; toward this goal, stand-alone laboratory courses taught by faculty are a central component of the curriculum for each major. The degree programs will teach students critical thinking skills and prepare them for a wide variety of careers including medicine, dentistry, research, biotechnology, pharmacy/pharmacology, public health and environmental and sustainability studies.

### Notes:

- BIOL 1003 Biology Matters is strongly recommended for all students who are considering a major in Biological Sciences, Biochemistry and Molecular Biology and Physiological Sciences.
- BIOL 4101 Biochemistry and the Molecular Basis of Biology is recommended for students intending to apply to medical, dental, graduate or pharmacy school.

## Major in Biological Sciences

The major in Biological Sciences consists of our required courses (12 credits), three lab courses (9 credits) and five elective courses (15-16 credits) for a total of 36-37 credit hours as well as the cognate course requirements in chemistry, physics, mathematics or computer science chosen from the lists below.

### Notes:

- Majors are encouraged to take upper division lab courses, although one lower-division, lab course may be used to satisfy this requirement.

### For elective courses\*

- Selection can also be from any laboratory courses not previously taken, including a second BIOL 4995 or a BISC 4995 course.
- A maximum of one course from the Department of Biomedical Sciences that is not offered by the Department of Biological Sciences.
- By consent of instructor and departmental chairperson, any biological sciences graduate course.

Required:

|           |                   |   |
|-----------|-------------------|---|
| BIOL 1001 | General Biology 1 | 3 |
| BIOL 1002 | General Biology 2 | 3 |

|  |   |       |
|--|---|-------|
| BIOL 2201                                    | Genetics  | 3     |
| BIOL 2301                                    | Cell Biology  | 3     |
| Lab Courses - Choose three of the following: |   | 9     |
| BIOL 2001                                    | Principles of Biological Investigation                |       |
| BIOL 3202                                    | Experimental Genetics                                 |       |
| BIOL 3302                                    | Experimental Cell Biology                             |       |
| BIOL 3502                                    | Experimental Neurobiology                             |       |
| BIOL 3702                                    | Experimental Physiology                               |       |
| BIOL 4102                                    | Experimental Molecular Biology                        |       |
| BIOL 4995                                    | Independent Study in Biology (must be for 3 cr. hrs.) |       |
| * Electives - Choose five of the following:  |   | 15-16 |
| BIOL 2401                                    | Ecology   |       |
| BIOL 3401                                    | Advanced Ecology                                      |       |
| BIOL 3406                                    | Plant Biology   |       |
| BIOL 3501                                    | Neurobiology  |       |
| BIOL 3601                                    | Animal Development                                    |       |
| BIOL 3701                                    | Human Physiology                                      |       |
| BIOL 3801                                    | Microbiology  |       |
| BIOL 4101                                    | Biochemistry and the Molecular Basis of Biology       |       |
| BIOL 4703                                    | Exercise Physiology                                   |       |
| BIOL 4806                                    | Immunobiology   |       |
| Total Credit Hours                           |   | 36-37 |

## Cognate Course Requirements:

|   |  |   |
|---|--|---|
| Required Chemistry Sequence:                              |  | 8 |
| CHEM 1001<br>& CHEM 1002                                  | General Chemistry 1<br>and General Chemistry 2                       |   |
| Organic Chemistry Sequence - Choose one of the following: |  | 8 |
| CHEM 2111<br>& CHEM 2112                                  | Organic Chemistry 1<br>and Organic Chemistry 2                       |   |
| CHEM 2113<br>& CHEM 2114                                  | Organic Chemistry for Majors 1<br>and Organic Chemistry for Majors 2 |   |

Physics Sequence - Choose one of the following:

8

PHYS 1001  
& PHYS 1002General Physics 1  
and General Physics 2PHYS 1003  
& PHYS 1004General Physics with Introductory Calculus 1  
and General Physics with Introductory Calculus 2

Mathematics and Computer Science:

6-7

MATH 1410

Calculus for the Biological Sciences

or MATH 1450

Calculus 1

MATH or COSC Course - Choose one additional course

3

Total Credit Hours

33-34

## Typical Program for Biological Science Majors

| Freshman                                 |       |  |       |
|--|-------|--|-------|
| First Term                               | Hours | Second Term                              | Hours |
| BIOL 1001                                | 3     | BIOL 1002                                | 3     |
| CHEM 1001                                | 4     | CHEM 1002                                | 4     |
| ENGL 1001                                | 3     | ENGL 1002                                | 3     |
| Foreign Language                         | 3-4   | Foreign Language                         | 3-4   |
| Social-Behavioral Science                | 3     | MATH 1410 or 1450*                       | 3     |
|  | 16-17 |  | 16-17 |
| Sophomore                                |       |  |       |
| First Term                               | Hours | Second Term                              | Hours |
| BIOL 2301                                | 3     | BIOL 2201                                | 3     |
| CHEM 2111 or 2113                        | 4     | CHEM 2112 or 2114                        | 4     |
| PHIL 1001                                | 3     | HIST 1001 or 1002                        | 3     |
| Literature                               | 3     | Literature                               | 3     |
| MATH/Computer elective*                  | 3-4   | THEO 1001                                | 3     |
|  | 16-17 |  | 16    |
| Junior                                   |       |  |       |
| First Term                               | Hours | Second Term                              | Hours |
| Biological Sci. elective or lab course** | 6-7   | Biological Sci. elective or lab course** | 6-7   |
| PHYS 1001 or 1003                        | 4     | PHYS 1002 or 1004                        | 4     |

|  |              |  |              |
|--|--------------|--|--------------|
| PHIL 2310                                | 3            | History/Social-Behavioral Science      | 3            |
| Elective                                 | 3            | Elective                               | 3            |
|  | 16-17        |  | 16-17        |
| <b>Senior</b>                            |              |  |              |
| <b>First Term</b>                        | <b>Hours</b> | <b>Second Term</b>                     | <b>Hours</b> |
| Biological Sci. elective or lab course** | 6-7          | Biological Sci. elective or lab course | 6            |
| Philosophy (upper division)              | 3            | Theology (third level)                 | 3            |
| Theology (second level)                  | 3            | Electives**                            | 3-5          |
| Elective                                 | 3            | Diverse Cultures elective              | 3            |
|  | 15-16        |  | 15-17        |
| Total credit hours: 126-134              |              |  |              |

**Note:** A minimum of 128 credits is required for the degree.

\* MATH 1410 Calculus for the Biological Sciences or MATH 1450 Calculus 1 and one other MATH or COSC course.

\*\* BIOL 4101 Biochemistry and the Molecular Basis of Biology is strongly recommended as a Biological Sciences elective for students intending to apply to medical, dental, graduate or pharmacy school.

## Major in Biological Sciences: Pre-dental Scholars

This major in biological sciences is open to students who were directly admitted to the Pre-dental Scholars Program or students who were accepted into the program after their freshman year. In this program, students complete three years of courses in the College of Arts and Sciences for a minimum of 98-101 credits (depending on foreign language) by end of third year. The fourth year of the program consists of Dental School course requirements which typically consist of approximately 46 credit hours. The major consists of six required biology courses (19 credit hours), one laboratory course (3 credit hours) and the first year Dental School course requirements, as well as nine cognate course requirements (31 credit hours) in chemistry, mathematics, physics and ARSC chosen from the lists below. Certain courses in the first year dental curriculum are counted toward completion of the Major in Physiological Sciences ( BISC 7410 Microbiology, BISC 7514 General Histology, BISC 7515 Biomedical Systems 1, BISC 7516 Biomedical Systems 2 and DEIN 7121 Oral Biology); in addition, other courses (i.e., DEIN 7118 Dental Rounds 1, DEIN 7124 Introduction to Clinical Practice 2, DEIN 7128 Dental Rounds 2, DEGD 7113 Dental Anatomy and Occlusion 1, DEGD 7123 Dental Anatomy and Occlusion 2) count toward the total credit hour requirement for the Bachelor of Science degree as well as for dental school requirements. After successful completion of these dental courses a B.S. degree will be conferred.

### **Note:**

- Dental curriculum for all dental students is determined by the Dental School and is subject to change.
- Students must achieve a grade of C or better in those courses in order to count them toward the B.S. completion.

## Required Courses:

|   |   |    |
|---|---|----|
| BIOL 1001   | General Biology 1                               | 3  |
| BIOL 1002   | General Biology 2                               | 3  |
| BIOL 2001   | Principles of Biological Investigation          | 3  |
| BIOL 2201   | Genetics  | 3  |
| BIOL 2301   | Cell Biology                                    | 3  |
| BIOL 4101   | Biochemistry and the Molecular Basis of Biology | 3  |
| Laboratory Courses - Choose one of the following: |   | 3  |
| BIOL 3202   | Experimental Genetics                           |    |
| BIOL 3302   | Experimental Cell Biology                       |    |
| BIOL 3502   | Experimental Neurobiology                       |    |
| BIOL 3702   | Experimental Physiology                         |    |
| BIOL 4102   | Experimental Molecular Biology                  |    |
| BIOL 4995   | Independent Study in Biology                    |    |
| Total Credit Hours                                |   | 21 |

## Cognate Course Requirements:

## ARSC Course:

|           |                    |   |
|-----------|--------------------|---|
| ARSC 1953 | First-Year Seminar | 1 |
|-----------|--------------------|---|

## Chemistry Courses:

|                          |  |   |
|--------------------------|--|---|
| CHEM 1001<br>& CHEM 1002 | General Chemistry 1<br>and General Chemistry 2 | 8 |
| CHEM 2111<br>& CHEM 2112 | Organic Chemistry 1<br>and Organic Chemistry 2 | 8 |

## Mathematics Courses:

|              |                                      |   |
|--------------|--------------------------------------|---|
| MATH 1410    | Calculus for the Biological Sciences | 3 |
| or MATH 1450 | Calculus 1                           |   |
| MATH 1700    | Modern Elementary Statistics         | 3 |

## Physics Courses:

|                          |  |   |
|--------------------------|--|---|
| PHYS 1001<br>& PHYS 1002 | General Physics 1<br>and General Physics 2 | 8 |
|--------------------------|--|---|

|                    |  |    |
|--------------------|--|----|
| Total Credit Hours |  | 31 |
|--------------------|--|----|

## Typical Program for Biological Sciences Major - Pre-dental Scholars Curriculum

| Freshman                                    |       |   |       |
|---|-------|---|-------|
| First Term                                  | Hours | Second Term                                 | Hours |
| BIOL 1001                                   | 3     | BIOL 1002                                   | 3     |
| CHEM 1001                                   | 4     | CHEM 1002                                   | 4     |
| ENGL 1001                                   | 3     | ENGL 1002                                   | 3     |
| Foreign Language or elective*               | 3-4   | Foreign Language or elective*               | 3-4   |
| HIST 1001 or 1002                           | 3     | MATH 1410 or 1450                           | 3     |
| ARSC 1953                                   | 1-3   | BISC 1030 (optional)                        | 1     |
|   | 17-20 |   | 17-18 |
| Sophomore                                   |       |   |       |
| First Term                                  | Hours | Second Term                                 | Hours |
| BIOL 2001                                   | 3     | BIOL 2201                                   | 3     |
| BIOL 2301                                   | 3     | CHEM 2112                                   | 4     |
| CHEM 2111                                   | 4     | Social Science (UCCS)                       | 3     |
| Literature (UCCS)                           | 3     | MATH 1700                                   | 3     |
| PHIL 1001                                   | 3     | THEO 1001                                   | 3     |
|   | 16    |   | 16    |
| Junior                                      |       |   |       |
| First Term                                  | Hours | Second Term                                 | Hours |
| BIOL 4101                                   | 3     | Biological Science elective                 | 3     |
| Biology (upper div. lab)/Diverse Cultures** | 3     | Biology (upper div. lab)/Diverse Cultures** | 3     |
| PHYS 1001                                   | 4     | PHYS 1002                                   | 4     |
| PHIL 2310                                   | 3     | Philosophy (upper division)                 | 3     |
| Theology (second level) (UCCS)              | 3     | Literature                                  | 3     |
|   |       | Theology (third level)                      | 3     |
|   | 16    |   | 19    |
| Total credit hours: 101-105                 |       |   |       |

- Must complete a minimum of 98 or 101 credits, depending on foreign language.



- \* If placed in SPAN 1003 Intensive Elementary Spanish, then only one semester is required, otherwise level 1001 and 1002 are required. No language is required if exempt or waived.
- \*\* Students must complete HIST 1301 Survey of Latin America, HIST 1401 Africa or a Diverse Cultures social science course and one upper division Biology lab.

## Year One - Dental Curriculum

| First Year             |       |             |       |
|------------------------|-------|-------------|-------|
| First Term             | Hours | Second Term | Hours |
| DEIN 7110              | 3     | DEIN 7120   | 3     |
| DEIN 7114              | 3     | DEIN 7121   | 4     |
| DEGD 7112              | 3     | DEIN 7124   | 2     |
| DEGD 7113              | 2     | DEGD 7122   | 3     |
| DEIN 7118              | 1     | DEGD 7123   | 2     |
| BISC 7514              | 4     | DEIN 7128   | 1     |
| BISC (TBD)             | 4     | BISC 7410   | 4     |
|                        |       | BISC 7515   | 3     |
|                        |       | BISC 7516   | 3     |
|                        | 20    |             | 25    |
| Total credit hours: 45 |       |             |       |

**Note:** Dental curriculum for all dental students is determined by the Dental School. This represents a sample year one schedule and is subject to change. The curriculum for years two through four are also the same as other dental students. Certain courses in the first year dental curriculum are counted toward completion of the bachelor of science degree as well as for dental school requirements. Students must achieve a grade of C or better in those courses in order to count them toward the B.S. completion.

## Minor in Biological Sciences

The minor in Biological Sciences consists of our required courses listed below and two electives chosen from Biological Sciences or one Biological Sciences elective and ANTH 2201 for a total of 19-20 credit hours.

**Note:**

- BIOL 1009 Biology for Non-Science Majors, BIOL 1406 Plants, Pathogens and People and BIOL 4995 Independent Study in Biology cannot be taken except with consent of department chairperson.

Required:

|  |   |       |
|--|---|-------|
| BIOL 1001                                | General Biology 1                               | 3     |
| BIOL 1002                                | General Biology 2                               | 3     |
| BIOL 2001                                | Principles of Biological Investigation          | 3     |
| CHEM 1001                                | General Chemistry 1                             | 4     |
| Electives - Choose two of the following: |   | 6-7   |
| ANTH 2201                                | Human Evolutionary Process                      |       |
| BIOL 2201                                | Genetics  |       |
| BIOL 2301                                | Cell Biology                                    |       |
| BIOL 2401                                | Ecology   |       |
| BIOL 3401                                | Advanced Ecology                                |       |
| BIOL 3406                                | Plant Biology                                   |       |
| BIOL 3501                                | Neurobiology                                    |       |
| BIOL 3601                                | Animal Development                              |       |
| BIOL 3701                                | Human Physiology                                |       |
| BIOL 3801                                | Microbiology                                    |       |
| BIOL 4101                                | Biochemistry and the Molecular Basis of Biology |       |
| BIOL 4201                                | Genomics and Bioinformatics                     |       |
| BIOL 4703                                | Exercise Physiology                             |       |
| BIOL 4806                                | Immunobiology                                   |       |
| Total Credit Hours                       |   | 19-20 |

## Department of Public Instruction Certification

College of Education students wishing to pursue Department of Public Instruction Certification should follow the biological sciences minor. The minor consists of five required courses (15 credit hours) and one additional upper division elective course in Biological Sciences for a total of 18-19 credit hours as follows:

Required:

|           |  |   |
|-----------|--|---|
| BIOL 1001 | General Biology 1                      | 3 |
| BIOL 1002 | General Biology 2                      | 3 |
| BIOL 2001 | Principles of Biological Investigation | 3 |
| BIOL 2201 | Genetics                               | 3 |

|  |              |       |
|--|--------------|-------|
| BIOL 2301  | Cell Biology | 3     |
| Elective - Choose one additional upper-division BIOL course. |              | 3-4   |
| Total Credit Hours   |              | 18-19 |

## Major in Biology for the Professions

Biology for the Professions is a second major for students in the College of Education who wish to teach biology at the high school level. The major consists of five required courses (15 credit hours), one additional Biology course (3-4 credit hours), one lab course (3 credit hours) and three elective courses (9 credit hours) for a total of 30-31 credit hours as well as the cognate course requirements in chemistry, physics, mathematics or computer science (22 credit hours) chosen from the lists below.

Required:

|  |  |     |
|--|--|-----|
| BIOL 1001  | General Biology 1                      | 3   |
| BIOL 1002  | General Biology 2                      | 3   |
| BIOL 2001  | Principles of Biological Investigation | 3   |
| BIOL 2201  | Genetics                               | 3   |
| BIOL 2301  | Cell Biology                           | 3   |
| Choose one additional course from the following: |  | 3-4 |

|           |                  |
|-----------|------------------|
| BIOL 3406 | Plant Biology    |
| BIOL 3701 | Human Physiology |
| BIOL 3801 | Microbiology     |

Lab Courses - Choose one of the following: 3

|           |                                |
|-----------|--------------------------------|
| BIOL 3202 | Experimental Genetics          |
| BIOL 3302 | Experimental Cell Biology      |
| BIOL 3502 | Experimental Neurobiology      |
| BIOL 3702 | Experimental Physiology        |
| BIOL 4102 | Experimental Molecular Biology |

\* Electives - Choose three of the following: 9

|           |                              |
|-----------|------------------------------|
| BIOL 1406 | Plants, Pathogens and People |
| BIOL 2401 | Ecology                      |
| BIOL 3401 | Advanced Ecology             |
| BIOL 3406 | Plant Biology                |
| BIOL 3501 | Neurobiology                 |
| BIOL 3601 | Animal Development           |

|                          |  |       |
|--------------------------|--|-------|
| BIOL 3701                | Human Physiology   |       |
| BIOL 3801                | Microbiology   |       |
| BIOL 4101<br>& CHEM 2112 | Biochemistry and the Molecular Basis of Biology<br>and Organic Chemistry 2 (CHEM 2112 prerequisite taken concurrently) |       |
| BIOL 4201                | Genomics and Bioinformatics  |       |
| BIOL 4806                | Immunobiology  |       |
| Total Credit Hours       |  | 30-31 |

**Notes: \*Electives**

- Any lab course from the lab course listing above not previously taken, including BIOL 4995.
- With consent of instructor and department chairperson any Biological Sciences graduate course.
- One Biomedical Sciences course not offered by Biological Sciences.
- Courses offered by other departments with consent of department chairperson.

Cognate courses: six courses required:

## Chemistry: three courses required

|                          |  |   |
|--------------------------|--|---|
| CHEM 1001<br>& CHEM 1002 | General Chemistry 1<br>and General Chemistry 2 | 8 |
| CHEM 2111                | Organic Chemistry 1                            | 4 |
| or CHEM 2113             | Organic Chemistry for Majors 1                 |   |

## Mathematics: two courses required

|              |  |   |
|--------------|--|---|
| MATH 1700    | Modern Elementary Statistics   | 3 |
| or MATH 4700 | Theory of Probability  |   |
| or MATH 4740 | Biostatistical Methods and Models  |   |
| MATH 1410    | Calculus for the Biological Sciences (not required but highly recommended) | 3 |
| or MATH 1450 | Calculus 1   |   |

## Physics: one course required

|              |                                    |   |
|--------------|------------------------------------|---|
| PHYS 1001    | General Physics 1                  | 4 |
| or PHYS 1008 | Astronomy and Space Physics        |   |
| or PHYS 1009 | Earth and Environmental Physics    |   |
| or ARSC 1020 | Major Concepts in Modern Science 1 |   |

|                    |  |    |
|--------------------|--|----|
| Total Credit Hours |  | 22 |
|--------------------|--|----|

## Typical Program for Biology for the Professions Majors

| Freshman                            |       |                          |       |
|-------------------------------------|-------|--------------------------|-------|
| First Term                          | Hours | Second Term              | Hours |
| BIOL 1001                           | 3     | BIOL 1002                | 3     |
| CHEM 1001                           | 4     | CHEM 1002                | 4     |
| EDUC 1210                           | 3     | EDUC 1220                | 3     |
| ENGL 1001                           | 3     | ENGL 1002                | 3     |
| Foreign Language                    | 3-4   | Foreign Language         | 3-4   |
|                                     | 16-17 |                          | 16-17 |
| Sophomore                           |       |                          |       |
| First Term                          | Hours | Second Term              | Hours |
| BIOL 2301                           | 3     | Biological Sci. elective | 3     |
| CHEM 2111                           | 4     | BIOL 2201                | 3     |
| EDUC 2227                           | 3     | EDUC 2037                | 3     |
| HIST 1001 or 1002                   | 3     | PHIL 1001                | 3     |
| THEO 1001                           | 3     | HIST 1301, 1401, or 1501 | 3     |
|                                     |       | EDUC 2037                | 3     |
|                                     | 16    |                          | 18    |
| Junior                              |       |                          |       |
| First Term                          | Hours | Second Term              | Hours |
| BIOL 2001                           | 3     | Biological Sci. lab      | 3     |
| EDUC 4217                           | 3     | Biological Sci. elective | 3     |
| MATH 1700                           | 3     | EDUC 4297                | 4     |
| Literature                          | 3     | EDUC 3240                | 3     |
| PHYS 1001, 1008, 1009, or ARSC 1020 | 4     | THEO 2000                | 3     |
| PHIL 2310                           | 3     |                          |       |
|                                     | 19    |                          | 16    |
| Senior                              |       |                          |       |
| First Term                          | Hours | Second Term              | Hours |
| BIOL 3406, 3701, or 3801            | 3-4   | EDUC 4965                | 15    |
| Biological Sci. elective            | 3     |                          |       |

|                             |       |    |
|-----------------------------|-------|----|
| EDUC 4540                   | 3     |    |
| Fine Art elective           | 3     |    |
| Advanced Methods            | 3     |    |
|                             | 15-16 | 15 |
| Total credit hours: 131-134 |       |    |

## Major in Physiological Sciences

Provides students interested in physiology and neurobiology a strong foundation in biological sciences, cell biology and biochemistry and further studies in neurobiology, human physiology and anatomy, muscle and exercise physiology. The major consists of eight required courses (25 credit hours), one anatomy course (3-4 credit hours) and three elective courses (9 credit hours) for a total of 37-38 credit hours as well as the cognate course requirements (40 credit hours) in biomedical science, chemistry, physics, mathematics, philosophy, theology and psychology chosen from the lists below.

### Notes:

- BIOL 1003 Biology Matters is strongly recommended for all students who are considering a major in Biological Sciences, Biochemistry and Molecular Biology and Physiological Sciences.
- BIOL 4101 Biochemistry and the Molecular Basis of Biology is strongly recommended for students intending to apply to medical, dental, graduate or pharmacy school.

### Required:

|           |                           |   |
|-----------|---------------------------|---|
| BIOL 1001 | General Biology 1         | 3 |
| BIOL 1002 | General Biology 2         | 3 |
| BIOL 2201 | Genetics                  | 3 |
| BIOL 2301 | Cell Biology              | 3 |
| BIOL 3501 | Neurobiology              | 3 |
| BIOL 3502 | Experimental Neurobiology | 3 |
| BIOL 3701 | Human Physiology          | 4 |
| BIOL 3702 | Experimental Physiology   | 3 |

### One of these anatomy courses:

|              |   |   |
|--------------|---|---|
| BISC 2125    | Human Microanatomy                              | 4 |
| or BISC 2135 | Human Anatomy                                   |   |
| or BIOL 3602 | Experimental Vertebrate Anatomy and Development |   |

### Electives - Choose three courses from the following: 9

|           |  |
|-----------|--|
| BIOL 2001 | Principles of Biological Investigation |
| BIOL 3202 | Experimental Genetics                  |

|                    |   |    |
|--------------------|---|----|
| BIOL 3302          | Experimental Cell Biology                       |    |
| BIOL 3401          | Advanced Ecology                                |    |
| BIOL 3406          | Plant Biology                                   |    |
| BIOL 3601          | Animal Development                              |    |
| BIOL 3602          | Experimental Vertebrate Anatomy and Development |    |
| BIOL 3801          | Microbiology                                    |    |
| BIOL 3802          | Experimental Microbiology                       |    |
| BIOL 4101          | Biochemistry and the Molecular Basis of Biology |    |
| BIOL 4102          | Experimental Molecular Biology                  |    |
| BIOL 4201          | Genomics and Bioinformatics                     |    |
| BIOL 4703          | Exercise Physiology                             |    |
| BIOL 4806          | Immunobiology                                   |    |
| BIOL 4995          | Independent Study in Biology                    |    |
| Total Credit Hours |   | 38 |

## Cognate Course Requirements:

## Biomedical Sciences Courses:

|              |                    |   |
|--------------|--------------------|---|
| BISC 2125    | Human Microanatomy | 4 |
| or BISC 2135 | Human Anatomy      |   |

## Chemistry Course:

|                          |  |   |
|--------------------------|--|---|
| CHEM 1001<br>& CHEM 1002 | General Chemistry 1<br>and General Chemistry 2 | 8 |
|--------------------------|--|---|

|              |                                |   |
|--------------|--------------------------------|---|
| CHEM 2111    | Organic Chemistry 1            | 4 |
| or CHEM 2113 | Organic Chemistry for Majors 1 |   |

|              |                                |   |
|--------------|--------------------------------|---|
| CHEM 2112    | Organic Chemistry 2            | 4 |
| or CHEM 2114 | Organic Chemistry for Majors 2 |   |

## Mathematics Courses:

|              |                                      |   |
|--------------|--------------------------------------|---|
| MATH 1410    | Calculus for the Biological Sciences | 3 |
| or MATH 1450 | Calculus 1                           |   |
| MATH 4740    | Biostatistical Methods and Models    | 3 |

## Philosophy or Theology Course:

|           |                   |   |
|-----------|-------------------|---|
| PHIL 4335 | Biomedical Ethics | 3 |
|-----------|-------------------|---|

or THEO 4450 Medical Ethics

## Physics Courses:

PHYS 1001 General Physics 1 4

or PHYS 1003 General Physics with Introductory Calculus 1

PHYS 1002 General Physics 2 4

or PHYS 1004 General Physics with Introductory Calculus 2

## Psychology Course:

PSYC 1001 General Psychology 3

Total Credit Hours 40

**Typical Program for Physiological Sciences Majors**

| Freshman          |       |                   |       |
|-------------------|-------|-------------------|-------|
| First Term        | Hours | Second Term       | Hours |
| BIOL 1001         | 3     | BIOL 1002         | 3     |
| CHEM 1001         | 4     | CHEM 1002         | 4     |
| ENGL 1001         | 3     | ENGL 1002         | 3     |
| Foreign Language  | 3-4   | Foreign Language  | 3-4   |
| PSYC 1001         | 3     | MATH 1410 or 1450 | 3-4   |
|                   | 16-17 |                   | 16-18 |
| Sophomore         |       |                   |       |
| First Term        | Hours | Second Term       | Hours |
| CHEM 2111 or 2113 | 4     | BIOL 2201         | 3     |
| BIOL 2301         | 3     | CHEM 2112 or 2114 | 4     |
| MATH 4740         | 3     | Literature        | 3     |
| Literature        | 3     | THEO 1001         | 3     |
| PHIL 1001         | 3     | HIST 1001 or 1002 | 3     |
|                   | 16    |                   | 16    |
| Junior            |       |                   |       |
| First Term        | Hours | Second Term       | Hours |
| PHYS 1001 or 1003 | 4     | BIOL 3501         | 3     |
| BIOL 3701         | 4     | BIOL 3502         | 3     |



|                             |              |                                   |              |
|-----------------------------|--------------|-----------------------------------|--------------|
| BIOL 3702                   | 3            | PHYS 1002 or 1004                 | 4            |
| PHIL 2310                   | 3            | History/Social-Behavioral Science | 3            |
| Elective                    | 3            | Diverse Cultures elective         | 3            |
|                             | 17           |                                   | 16           |
| <b>Senior</b>               |              |                                   |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>                | <b>Hours</b> |
| BISC 2125 or 2135           | 4            | Biological Sci. electives         | 6-7          |
| Biological Sci. electives   | 6-7          | PHIL 4335                         | 3            |
| Theology (second level)     | 3            | Theology (third level)            | 3            |
| Elective                    | 3            | Elective                          | 3            |
|                             | 16-17        |                                   | 15-16        |
| Total credit hours: 128-133 |              |                                   |              |

\* The courses listed in the junior and senior year may be interchanged.

\*\* BIOL 4101 Biochemistry and the Molecular Basis of Biology is strongly recommended as a Physiological Sciences elective for students intending to apply to medical, dental, graduate or pharmacy school.

\*\*\* THEO 4450 Medical Ethics is interchangeable with PHIL 4335 Biomedical Ethics for Medical Ethics.

## Major in Physiological Sciences: Pre-dental Scholars

This major in physiological sciences is open to students who were directly admitted to the Pre-dental Scholars Program or students who were accepted into the program after their freshman year. In this program, students complete three years of courses in the College of Arts and Sciences for a minimum of 98-101 credits (depending on foreign language) by end of third year. The fourth year of the program consists of Dental School course requirements, which typically consist of approximately 46 credit hours. The major consists of six required biology courses, one laboratory course and the first year Dental School course requirements, as well as ten cognate course requirements in chemistry, mathematics, philosophy or theology, physics and ARSC chosen from the lists below. Certain courses in the first year dental curriculum are counted toward completion of the Major in Physiological Sciences ( BISC 7410 Microbiology, BISC 7514 General Histology, BISC 7515 Biomedical Systems 1, BISC 7516 Biomedical Systems 2 and DEIN 7121 Oral Biology); in addition, other courses (i.e., DEIN 7114 Introduction to Clinical Practice 1, DEIN 7118 Dental Rounds 1, DEIN 7124 Introduction to Clinical Practice 2, DEIN 7128 Dental Rounds 2; DEGD 7113 Dental Anatomy and Occlusion 1, DEGD 7123 Dental Anatomy and Occlusion 2) count toward the total credit hour requirement for the Bachelor of Science degree as well as for dental school requirements. After successful completion of these dental courses a B.S. degree will be conferred.

### Notes:

- Dental curriculum for all dental students is determined by the Dental School and is subject to change.

- Students must achieve a grade of C or better in those courses in order to count them toward the B.S. completion.

## Required Courses:

|           |   |   |
|-----------|---|---|
| BIOL 1001 | General Biology 1                               | 3 |
| BIOL 1002 | General Biology 2                               | 3 |
| BIOL 2301 | Cell Biology                                    | 3 |
| BIOL 3501 | Neurobiology                                    | 3 |
| BIOL 3701 | Human Physiology                                | 4 |
| BIOL 4101 | Biochemistry and the Molecular Basis of Biology | 3 |

## Laboratory Course Requirement:

|              |                           |   |
|--------------|---------------------------|---|
| BIOL 3502    | Experimental Neurobiology | 3 |
| or BIOL 3702 | Experimental Physiology   |   |

## First Year Dental School Requirements for BS Completion:

|           |                                     |   |
|-----------|-------------------------------------|---|
| BISC 7410 | Microbiology                        | 4 |
| BISC 7514 | General Histology                   | 4 |
| BISC 7515 | Biomedical Systems 1                | 3 |
| BISC 7516 | Biomedical Systems 2                | 3 |
| DEIN 7121 | Oral Biology                        | 4 |
| DEIN 7114 | Introduction to Clinical Practice 1 | 3 |
| DEIN 7124 | Introduction to Clinical Practice 2 | 2 |
| DEGD 7113 | Dental Anatomy and Occlusion 1      | 2 |
| DEGD 7123 | Dental Anatomy and Occlusion 2      | 2 |
| DEIN 7118 | Dental Rounds 1                     | 1 |
| DEIN 7128 | Dental Rounds 2                     | 1 |

---

|                    |  |    |
|--------------------|--|----|
| Total Credit Hours |  | 51 |
|--------------------|--|----|

## Cognate Course Requirements:

## ARSC Course:

|           |                    |   |
|-----------|--------------------|---|
| ARSC 1953 | First-Year Seminar | 1 |
|-----------|--------------------|---|

## Chemistry Courses:

|                          |  |   |
|--------------------------|--|---|
| CHEM 1001<br>& CHEM 1002 | General Chemistry 1<br>and General Chemistry 2 | 8 |
|--------------------------|--|---|

|  |  |    |
|--|--|----|
| CHEM 2111<br>& CHEM 2112                     | Organic Chemistry 1<br>and Organic Chemistry 2     | 8  |
| Mathematics Courses:                         |  |    |
| MATH 1410<br>or MATH 1450                    | Calculus for the Biological Sciences<br>Calculus 1 | 3  |
| MATH 4740                                    | Biostatistical Methods and Models                  | 3  |
| Ethics Course - Choose one of the following: |  |    |
| PHIL 4335<br>or THEO 4450                    | Biomedical Ethics<br>Medical Ethics                | 3  |
| Physics Courses:                             |  |    |
| PHYS 1001<br>& PHYS 1002                     | General Physics 1<br>and General Physics 2         | 8  |
| Total Credit Hours                           |  | 34 |

## Typical Program for Physiological Sciences Majors - Pre-dental Scholars

| Freshman                      |       |                                |       |
|-------------------------------|-------|--------------------------------|-------|
| First Term                    | Hours | Second Term                    | Hours |
| BIOL 1001                     | 3     | BIOL 1002                      | 3     |
| CHEM 1001                     | 4     | CHEM 1002                      | 4     |
| ENGL 1001                     | 3     | ENGL 1002                      | 3     |
| Foreign Language or elective* | 3-4   | MATH 1410 or 1450              | 3     |
| PSYC 1001                     | 3     | BISC 1030 (optional)           | 1     |
| ARSC 1953                     | 1-3   | Foreign Language or elective*  | 3-4   |
|                               | 17-20 |                                | 17-18 |
| Sophomore                     |       |                                |       |
| First Term                    | Hours | Second Term                    | Hours |
| BIOL 2301                     | 3     | CHEM 2112                      | 4     |
| CHEM 2111                     | 4     | Literature                     | 3     |
| THEO 1001                     | 3     | HIST 1001 or 1002              | 3     |
| Literature (UCCS)             | 3     | PHIL 1001                      | 3     |
| MATH 4740                     | 3     | Theology (second level) (UCCS) | 3     |
|                               | 16    |                                | 16    |

| <b>Junior</b>                     |              |                                   |              |
|-----------------------------------|--------------|-----------------------------------|--------------|
| <b>First Term</b>                 | <b>Hours</b> | <b>Second Term</b>                | <b>Hours</b> |
| BIOL 3701                         | 4            | BIOL 3501                         | 3            |
| BIOL 3702 (or Diverse Cultures)** | 3            | BIOL 3502 (or Diverse Cultures)** | 3            |
| BIOL 4101                         | 3            | PHYS 1002                         | 4            |
| PHYS 1001                         | 4            | Philosophy (upper division)       | 3            |
| PHIL 2310                         | 3            | Theology (third level)            | 3            |
|                                   | 17           |                                   | 16           |
| Total credit hours: 99-103        |              |                                   |              |

- Must complete a minimum of 98 or 101 credits, depending on foreign language.

\* If placed in SPAN 1003 Intensive Elementary Spanish, then only one semester is required, otherwise level 1001 and 1002 are required. No language is required if exempt or waived.

\*\* Students must complete HIST 1301 Survey of Latin America, HIST 1401 Africa or a Diverse Cultures social science course and one upper division Biology lab.

## Year One - Dental Curriculum

| <b>First Year</b>      |              |                    |              |
|------------------------|--------------|--------------------|--------------|
| <b>First Term</b>      | <b>Hours</b> | <b>Second Term</b> | <b>Hours</b> |
| DEIN 7110              | 3            | DEIN 7120          | 3            |
| DEIN 7114              | 3            | DEIN 7121          | 4            |
| DEIN 7118              | 1            | DEIN 7124          | 2            |
| DEGD 7112              | 3            | DEIN 7128          | 1            |
| DEGD 7113              | 2            | DEGD 7122          | 3            |
| BISC 7514              | 4            | DEGD 7123          | 2            |
| BISC (TBD)             | 4            | BISC 7410          | 4            |
|                        |              | BISC 7515          | 3            |
|                        |              | BISC 7516          | 3            |
|                        | 20           |                    | 25           |
| Total credit hours: 45 |              |                    |              |

**Note:** Dental curriculum for all dental students is determined by the Dental School. This represents a sample year one schedule and is subject to change. The curriculum for years two through four are also the same as other dental students. Certain courses in the first year dental curriculum are counted

toward completion of the Bachelor of Science degree as well as for dental school requirements. Students must achieve a grade of C or better in those courses in order to count them toward the B.S. completion.

## Major in Physiological Sciences - Physical Therapy Concentration

Open only to undergraduate students who have been admitted directly into the six year doctor of physical therapy degree program, are in good academic standing prior to the beginning of the professional phase of the program and want to earn a bachelor of science degree from the Klingler College of Arts and Sciences after four years of study. The major consists of nineteen required courses (57 credit hours) as well as ten cognate course requirements (36 credit hours) in chemistry, physics, mathematics, philosophy and psychology chosen from the lists below.

### Note:

- For information on the physical therapy program, please see the College of Health Sciences section in this bulletin. Students admitted directly to the doctoral PT program who are interested in the Physiological Sciences major should contact the Department of Biological Sciences as soon as possible, and then consult with an adviser in the Department of Physical Therapy.

### Required:

#### Biology Courses:

|           |                           |   |
|-----------|---------------------------|---|
| BIOL 1001 | General Biology 1         | 3 |
| BIOL 1002 | General Biology 2         | 3 |
| BIOL 2201 | Genetics                  | 3 |
| BIOL 2301 | Cell Biology              | 3 |
| BIOL 3501 | Neurobiology              | 3 |
| BIOL 3502 | Experimental Neurobiology | 3 |
| BIOL 3701 | Human Physiology          | 4 |
| BIOL 3702 | Experimental Physiology   | 3 |

#### Biomedical Sciences Courses:

|           |                     |   |
|-----------|---------------------|---|
| BISC 3150 | General Pathology   | 3 |
| BISC 4120 | Pharmacology        | 3 |
| BISC 4130 | Human Gross Anatomy | 5 |

#### Physical Therapy Courses:

|          |                                  |   |
|----------|----------------------------------|---|
| PTH 1001 | Introduction to Physical Therapy | 1 |
| PTH 7503 | Patient Management 1             | 3 |
| PTH 7512 | Culture and Disability           | 3 |
| PTH 7515 | Pathophysiology and Aging        | 4 |

|                    |   |    |
|--------------------|---|----|
| PHTH 7525          | Kinesiology 1: The Upper Extremity              | 3  |
| PHTH 7528          | Physical Therapy Evaluation, Tests and Measures | 2  |
| PHTH 7513          | Health Care Policy/Management                   | 3  |
| PHTH 7530          | Pain Mechanisms and Treatment                   | 2  |
| Total Credit Hours |   | 57 |

Cognate Course Requirements: Ten courses:

Chemistry - Required Sequence:

|                          |  |   |
|--------------------------|--|---|
| CHEM 1001<br>& CHEM 1002 | General Chemistry 1<br>and General Chemistry 2 | 8 |
|--------------------------|--|---|

Chemistry Sequence - Choose one of the following: 8

|                          |  |
|--------------------------|--|
| CHEM 2111<br>& CHEM 2112 | Organic Chemistry 1<br>and Organic Chemistry 2 |
|--------------------------|--|

|                          |  |
|--------------------------|--|
| CHEM 2113<br>& CHEM 2114 | Organic Chemistry for Majors 1<br>and Organic Chemistry for Majors 2 |
|--------------------------|--|

Mathematics:

|           |                                      |   |
|-----------|--------------------------------------|---|
| MATH 1410 | Calculus for the Biological Sciences | 3 |
|-----------|--------------------------------------|---|

|              |            |
|--------------|------------|
| or MATH 1450 | Calculus 1 |
|--------------|------------|

|           |                              |   |
|-----------|------------------------------|---|
| MATH 1700 | Modern Elementary Statistics | 3 |
|-----------|------------------------------|---|

|              |                                   |
|--------------|-----------------------------------|
| or MATH 4740 | Biostatistical Methods and Models |
|--------------|-----------------------------------|

Ethics Course: 3

|           |                   |
|-----------|-------------------|
| PHIL 4335 | Biomedical Ethics |
|-----------|-------------------|

Physics Sequence - Choose one of the following: 8

|                          |  |
|--------------------------|--|
| PHYS 1001<br>& PHYS 1002 | General Physics 1<br>and General Physics 2 |
|--------------------------|--|

|                          |  |
|--------------------------|--|
| PHYS 1003<br>& PHYS 1004 | General Physics with Introductory Calculus 1<br>and General Physics with Introductory Calculus 2 |
|--------------------------|--|

Psychology: 3

|           |                    |
|-----------|--------------------|
| PSYC 1001 | General Psychology |
|-----------|--------------------|

|                    |  |    |
|--------------------|--|----|
| Total Credit Hours |  | 36 |
|--------------------|--|----|

## Typical Program for Physiological Sciences Major - Physical Therapy Concentration

| Freshman  |       |                         |       |
|---|-------|-------------------------|-------|
| First Term  | Hours | Second Term             | Hours |
| BIOL 1001   | 3     | BIOL 1002               | 3     |
| CHEM 1001   | 4     | CHEM 1002               | 4     |
| ENGL 1001   | 3     | ENGL 1002               | 3     |
| Foreign Language                                  | 3-4   | Foreign Language        | 3-4   |
| PSYC 1001   | 3     | THEO 1001               | 3     |
|   | 16-17 |                         | 16-17 |
| Sophomore   |       |                         |       |
| First Term  | Hours | Second Term             | Hours |
| BIOL 2301   | 3     | BIOL 2201               | 3     |
| CHEM 2111 or 2113                                 | 4     | CHEM 2112 or 2114       | 4     |
| HIST 1001 or 1002                                 | 3     | PHIL 1001               | 3     |
| MATH 1410 or 1450                                 | 3     | Literature              | 3     |
| Literature  | 3     | Theology (second level) | 3     |
|   | 16    |                         | 16    |
| Junior  |       |                         |       |
| First Term  | Hours | Second Term             | Hours |
| BIOL 3701   | 4     | BIOL 3501               | 3     |
| BIOL 3702   | 3     | BIOL 3502               | 3     |
| PHYS 1001 or 1003                                 | 4     | MATH 1700 or 4740       | 3     |
| PHIL 2310   | 3     | PHYS 1002 or 1004       | 4     |
| Theology (third level)*                           | 3     | History/Social Science  | 3     |
|   |       | PHTH 1001               | 1     |
|   | 17    |                         | 17    |
| Senior  |       |                         |       |
| First Term  | Hours | Second Term             | Hours |
| BISC 4130   | 5     | BISC 3150               | 3     |
| PHTH 7503   | 3     | BISC 4120               | 3     |
| PHTH 7512 (fulfills Diverse Cultures requirement) | 3     | PHTH 7515               | 4     |

|                             |    |           |    |
|-----------------------------|----|-----------|----|
| PHTH 7513                   | 3  | PHTH 7525 | 3  |
| PHIL 4335**                 | 3  | PHTH 7528 | 2  |
|                             |    | PHTH 7530 | 2  |
|                             | 17 |           | 17 |
| Total credit hours: 132-134 |    |           |    |

\* THEO 4450 Medical Ethics can be taken as a substitute for PHIL 4335 Biomedical Ethics.

\*\* If PHIL 4335 Biomedical Ethics cannot be scheduled due to conflicts with other required courses, students may take any upper division PHIL course (3000 or higher), but unless they have taken THEO 4450 Medical Ethics, they will be required to take a once credit medical ethics course ( PHIL 4336 Applied Ethics for the Health Sciences).

## Major in Biochemistry and Molecular Biology

The major in biochemistry and molecular biology consists of 53-56 credit hours in addition to the cognate course requirements as listed below.

Required Biological Sciences courses (18 cr. hrs.):

|           |   |   |
|-----------|---|---|
| BIOL 1001 | General Biology 1 (Biological courses:)         | 3 |
| BIOL 1002 | General Biology 2                               | 3 |
| BIOL 2201 | Genetics  | 3 |
| BIOL 2301 | Cell Biology                                    | 3 |
| BIOL 4101 | Biochemistry and the Molecular Basis of Biology | 3 |
| BIOL 4102 | Experimental Molecular Biology                  | 3 |

Required Chemistry Courses (23 cr. hrs.)

|           |                       |   |
|-----------|-----------------------|---|
| CHEM 1001 | General Chemistry 1   | 4 |
| CHEM 1002 | General Chemistry 2   | 4 |
| CHEM 3201 | Quantitative Analysis | 4 |

Organic Chemistry Sequence - Choose one of the following: 8

|              |                                |  |
|--------------|--------------------------------|--|
| CHEM 2113    | Organic Chemistry for Majors 1 |  |
| or CHEM 2111 | Organic Chemistry 1            |  |
| CHEM 2114    | Organic Chemistry for Majors 2 |  |
| or CHEM 2112 | Organic Chemistry 2            |  |

Physical Chemistry - Choose one of the following: 3



|   |   |      |
|---|---|------|
| CHEM 4431   | Physical Chemistry: Fundamentals with Applications in Biological Sciences |      |
| CHEM 4433<br>& 4434   | Physical Chemistry 1<br>and Physical Chemistry 2                          |      |
| Biological Sciences Laboratory Course - Choose one course from the following: |   | 3    |
| BIOL 3202   | Experimental Genetics   |      |
| BIOL 3302   | Experimental Cell Biology   |      |
| BIOL 3502   | Experimental Neurobiology   |      |
| BIOL 3702   | Experimental Physiology   |      |
| BIOL 4102   | Experimental Molecular Biology  |      |
| BIOL 4995   | Independent Study in Biology  |      |
| CHEM 4995   | Independent Study in Chemistry  |      |
| Elective Courses - Choose any three of the following not previously taken:    |   | 9-12 |
| Biology Courses:  |   |      |
| BIOL 3202   | Experimental Genetics   |      |
| BIOL 3302   | Experimental Cell Biology   |      |
| BIOL 3401   | Advanced Ecology  |      |
| BIOL 3406   | Plant Biology   |      |
| BIOL 3501   | Neurobiology  |      |
| BIOL 3502   | Experimental Neurobiology   |      |
| BIOL 3601   | Animal Development  |      |
| BIOL 3701   | Human Physiology  |      |
| BIOL 3702   | Experimental Physiology   |      |
| BIOL 3801   | Microbiology  |      |
| BIOL 4703   | Exercise Physiology   |      |
| BIOL 4806   | Immunobiology   |      |
| BIOL 4995   | Independent Study in Biology  |      |
| or BISC 4995  | Independent Study in Biomedical Sciences                                  |      |
| Chemistry Courses:  |   |      |
| CHEM 3210   | Instrumental Analysis   |      |
| CHEM 4130   | Characterization of Organic Compounds                                     |      |
| CHEM 4330   | Inorganic Chemistry   |      |

CHEM 4430 Introduction to Quantum Chemistry

CHEM 4530 Introduction to Biochemistry

Mathematics Courses:

MATH 2450 Calculus 3

MATH 2451 Differential Equations

MATH 4740 Biostatistical Methods and Models

Total Credit Hours

53-56

**Notes:**

- Students who take CHEM 4433 Physical Chemistry 1, CHEM 4434 Physical Chemistry 2 and MATH 2450 Calculus 3 are required to take only one additional elective in biological sciences, chemistry or mathematics.
- A second BIOL 4995 Independent Study in Biology course if BIOL 4995 previously taken as a laboratory course.
- Students electing this curriculum are expected to complete all Arts and Sciences core curriculum requirements.
- Honors courses will be available from both departments by contract with the instructors. Courses available for honors credit will be identified.

**Cognate Course Requirements:**

Mathematics Courses:

MATH 1450 Calculus 1 4

MATH 1451 Calculus 2 4

Physics Sequence - Choose one of the following: 8

PHYS 1001 &amp; 1002 General Physics 1 and General Physics 2

PHYS 1003 &amp; 1004 General Physics with Introductory Calculus 1 and General Physics with Introductory Calculus 2

Total Credit Hours

16

**Typical Program for Biochemistry/Molecular Biology Majors**

| Freshman   |       |             |       |
|------------|-------|-------------|-------|
| First Term | Hours | Second Term | Hours |
| BIOL 1001  | 3     | BIOL 1002   | 3     |
| CHEM 1001  | 4     | CHEM 1002   | 4     |
| MATH 1450  | 4     | MATH 1451   | 4     |

|  |              |   |              |
|--|--------------|---|--------------|
| ENGL 1001                                  | 3            | ENGL 1002   | 3            |
| Foreign Language                           | 3-4          | Foreign Language  | 3-4          |
|  | 17-18        |   | 17-18        |
| <b>Sophomore</b>                           |              |   |              |
| <b>First Term</b>                          | <b>Hours</b> | <b>Second Term</b>                                      | <b>Hours</b> |
| CHEM 2111 or 2113                          | 4            | HIST 1001 or 1002                                       | 3            |
| PHYS 1001 or 1003                          | 4            | CHEM 2112 or 2114                                       | 4            |
| BIOL 2301                                  | 3            | PHYS 1002 or 1004                                       | 4            |
| PHIL 1001                                  | 3            | PHIL 2310   | 3            |
| THEO 1001                                  | 3            | BIOL 2201   | 3            |
|  | 17           |   | 17           |
| <b>Junior</b>                              |              |   |              |
| <b>First Term</b>                          | <b>Hours</b> | <b>Second Term</b>                                      | <b>Hours</b> |
| BIOL 4101                                  | 3            | Biological Sci. laboratory course<br>(upper division)** | 3            |
| CHEM 4431*                                 | 3            | History/ Social-Behavioral Science                      | 3            |
| Theology (second level)                    | 3            | CHEM 3201   | 4            |
| Literature                                 | 3            | Literature  | 3            |
| Elective                                   | 3            | Elective  | 3            |
|  | 15           |   | 16           |
| <b>Senior</b>                              |              |   |              |
| <b>First Term</b>                          | <b>Hours</b> | <b>Second Term</b>                                      | <b>Hours</b> |
| BIOL 4102                                  | 3            | Biochemistry/Molecular Biology<br>electives             | 6            |
| Biochemistry/Molecular Biology<br>elective | 3-4          | Philosophy (upper division)                             | 3            |
| Theology (third level)                     | 3            | Social-Behavioral Science                               | 3            |
| Elective                                   | 3            | Elective  | 3            |
| Diverse Cultures elective                  | 3            |   |              |
|  | 15-16        |   | 15           |
| Total credit hours: 129-132                |              |   |              |

- \* Many students, including those continuing on to graduate school, should consider the option of two terms of physical chemistry ( CHEM 4433 Physical Chemistry 1 and CHEM 4434 Physical Chemistry 2) which require an additional term of calculus ( MATH 2450 Calculus 3). Students who take CHEM 4433 Physical Chemistry 1, CHEM 4434 Physical Chemistry 2, and MATH 2450 Calculus 3 are required to take only one additional elective in biological sciences, chemistry or mathematics.
- \*\* BIOL 4995 Independent Study in Biology or CHEM 4995 Independent Study in Chemistry may be substituted.

# Chemistry

**Chairperson: Scott Reid, Ph.D.**

Department of Chemistry website (<http://www.marquette.edu/chem/>)

The Marquette University Chemistry Department offers several chemistry major and minor areas of study for undergraduate students interested in pursuing careers in or related to chemistry or biochemistry. Three chemistry majors are available: Chemistry, Biochemistry and Molecular Biology (joint with Biological Sciences) and Chemistry for the Professions (if first major is in Education). A minor in chemistry is available. The chemistry major is certified by the American Chemical Society and prepares a student for graduate school in chemistry or related areas, for professional schools or for employment. The course work will teach students to understand the important concepts of science which will prepare them for the many fields which require a strong understanding of science. These fields include chemistry, dental and medical careers, law, business and education.

## Major in Chemistry

The major in chemistry consists of 43 credit hours as well as additional background courses in mathematics (12 credit hours) and physics (8 credit hours) as listed below.

### Notes:

- Students who select a chemistry major following their sophomore year may substitute CHEM 2111 Organic Chemistry 1, CHEM 2112 Organic Chemistry 2 for CHEM 2113 Organic Chemistry for Majors 1, CHEM 2114 Organic Chemistry for Majors 2, respectively.
- French or German are recommended for fulfillment of the foreign language requirement.
- Chemistry offers both American Chemical Society (ACS) certified and non-certified degrees. Consult with the department undergraduate curriculum chair for the requirements of each.

### Required Courses:

|           |                                |   |
|-----------|--------------------------------|---|
| CHEM 1001 | General Chemistry 1            | 4 |
| CHEM 1002 | General Chemistry 2            | 4 |
| CHEM 2113 | Organic Chemistry for Majors 1 | 4 |
| CHEM 2114 | Organic Chemistry for Majors 2 | 4 |
| CHEM 3210 | Instrumental Analysis          | 4 |
| CHEM 3201 | Quantitative Analysis          | 4 |
| CHEM 3320 | Inorganic Synthesis            | 2 |
| CHEM 3420 | Physical Chemistry Laboratory  | 2 |
| CHEM 4330 | Inorganic Chemistry            | 3 |
| CHEM 4433 | Physical Chemistry 1           | 3 |
| CHEM 4434 | Physical Chemistry 2           | 3 |

Electives - Choose two additional chemistry courses

6

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Total Credit Hours

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43

**Additional Course Requirements for Chemistry Majors:**

### Mathematics Courses:

|           |            |   |
|-----------|------------|---|
| MATH 1450 | Calculus 1 | 4 |
| MATH 1451 | Calculus 2 | 4 |
| MATH 2450 | Calculus 3 | 4 |

Physics Courses:

|              |  |   |
|--------------|--|---|
| PHYS 1013    | Classical and Modern Physics with Calculus 1 | 4 |
| or PHYS 1003 | General Physics with Introductory Calculus 1 |   |

|              |  |   |
|--------------|--|---|
| PHYS 1014    | Classical and Modern Physics with Calculus 2 | 4 |
| or PHYS 1004 | General Physics with Introductory Calculus 2 |   |

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Total Credit Hours

---

20

## Typical Program for Chemistry Majors

| Freshman          |       |                   |       |
|-------------------|-------|-------------------|-------|
| First Term        | Hours | Second Term       | Hours |
| CHEM 1001         | 4     | CHEM 1002         | 4     |
| ENGL 1001         | 3     | ENGL 1002         | 3     |
| MATH 1450         | 4     | MATH 1451         | 4     |
| Foreign Language  | 3-4   | Foreign Language  | 3-4   |
|                   |       | THEO 1001         | 3     |
|                   | 14-15 |                   | 17-18 |
| Sophomore         |       |                   |       |
| First Term        | Hours | Second Term       | Hours |
| CHEM 2113         | 4     | CHEM 2114         | 4     |
| PHYS 1013 or 1003 | 4     | CHEM 3201         | 4     |
| MATH 2450         | 4     | PHYS 1014 or 1004 | 4     |
| Literature        | 3     | Literature        | 3     |

|                             |              |                                   |              |
|-----------------------------|--------------|-----------------------------------|--------------|
| HIST 1001 or 1002           | 3            | History/Social Behavioral Science | 3            |
|                             | 18           |                                   | 18           |
| <b>Junior</b>               |              |                                   |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>                | <b>Hours</b> |
| CHEM 3210                   | 4            | CHEM 4434                         | 3            |
| CHEM 4433                   | 3            | Chemistry elective *              | 3            |
| PHIL 1001                   | 3            | Social Behavioral Science         | 3            |
| Theology (second level)     | 3            | Theology (third level)            | 3            |
| Elective                    | 3            | PHIL 2310                         | 3            |
|                             | 16           |                                   | 15           |
| <b>Senior</b>               |              |                                   |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>                | <b>Hours</b> |
| CHEM 4330                   | 3            | CHEM 3420**                       | 2            |
| CHEM 3320                   | 2            | Chemistry elective *              | 3            |
| Philosophy (upper division) | 3            | Diverse Cultures elective         | 3            |
| Electives                   | 6            | Electives                         | 9            |
|                             | 14           |                                   | 17           |
| Total credit hours: 129-131 |              |                                   |              |

\* CHEM 4530 Introduction to Biochemistry is required for the American Chemical Society certified degree.

\*\* CHEM 3420 Physical Chemistry Laboratory may be taken the junior year, concurrently with CHEM 4434.

## Minor in Chemistry

The minor consists of five courses in chemistry.

### Notes:

- CHEM 4995 Independent Study in Chemistry may not be counted toward the minor.
- PHYS 4012 Quantum Mechanics or PHYS 4062 Introduction to Thermodynamics may be counted for the minor.

## Department of Public Instruction Certification

College of Education students wishing to pursue Department of Public Instruction Certification must complete the following courses listed below for a total of 22 credit hours:

Required:

|   |                                |    |
|---|--------------------------------|----|
| CHEM 1001   | General Chemistry 1            | 4  |
| CHEM 1002   | General Chemistry 2            | 4  |
| CHEM 3201   | Quantitative Analysis          | 4  |
| CHEM 2111   | Organic Chemistry 1            | 4  |
| or CHEM 2113  | Organic Chemistry for Majors 1 |    |
| CHEM 2112   | Organic Chemistry 2            | 4  |
| or CHEM 2114  | Organic Chemistry for Majors 2 |    |
| Electives - Choose two hours of Chemistry electives |                                | 2  |
| Total Credit Hours                                  |                                | 22 |

## Major in Chemistry for the Professions

Chemistry for the Professions is a second major for students in the College of Education who wish to teach chemistry at the high school level. The major consists of 34 credit hours as well as the additional course requirements (12 credit hours) listed below to fulfill prerequisites for required course work.

Required:

|   |                                |    |
|---|--------------------------------|----|
| CHEM 1001   | General Chemistry 1            | 4  |
| CHEM 1002   | General Chemistry 2            | 4  |
| CHEM 2113   | Organic Chemistry for Majors 1 | 4  |
| CHEM 2114   | Organic Chemistry for Majors 2 | 4  |
| CHEM 3201   | Quantitative Analysis          | 4  |
| CHEM 3210   | Instrumental Analysis          | 4  |
| CHEM 4433   | Physical Chemistry 1           | 3  |
| CHEM 4434   | Physical Chemistry 2           | 3  |
| Electives - Choose four credit hours of Chemistry electives |                                | 4  |
| Total Credit Hours  |                                | 34 |

### Note:

- The additional course requirements listed below for the Chemistry for the Professions major are prerequisites for CHEM 4433 Physical Chemistry 1 and CHEM 4434 Physical Chemistry 2.



## Mathematics Course:

|           |            |   |
|-----------|------------|---|
| MATH 2450 | Calculus 3 | 4 |
|-----------|------------|---|

## Physics Courses:

|              |  |   |
|--------------|--|---|
| PHYS 1013    | Classical and Modern Physics with Calculus 1 | 4 |
| or PHYS 1001 | General Physics 1                            |   |
| or PHYS 1003 | General Physics with Introductory Calculus 1 |   |
| PHYS 1014    | Classical and Modern Physics with Calculus 2 | 4 |
| or PHYS 1002 | General Physics 2                            |   |
| or PHYS 1004 | General Physics with Introductory Calculus 2 |   |

|                    |  |    |
|--------------------|--|----|
| Total Credit Hours |  | 12 |
|--------------------|--|----|

## Major in Biochemistry and Molecular Biology

The major in biochemistry and molecular biology consists of 53-56 credit hours in addition to the cognate course requirements as listed below.

## Required Biological Sciences courses (18 cr. hrs.):

|           |   |   |
|-----------|---|---|
| BIOL 1001 | General Biology 1 (Biological courses:)         | 3 |
| BIOL 1002 | General Biology 2                               | 3 |
| BIOL 2201 | Genetics  | 3 |
| BIOL 2301 | Cell Biology                                    | 3 |
| BIOL 4101 | Biochemistry and the Molecular Basis of Biology | 3 |
| BIOL 4102 | Experimental Molecular Biology                  | 3 |

## Required Chemistry Courses (23 cr. hrs.)

|           |                       |   |
|-----------|-----------------------|---|
| CHEM 1001 | General Chemistry 1   | 4 |
| CHEM 1002 | General Chemistry 2   | 4 |
| CHEM 3201 | Quantitative Analysis | 4 |

## Organic Chemistry Sequence - Choose one of the following: 8

|              |                                |  |
|--------------|--------------------------------|--|
| CHEM 2113    | Organic Chemistry for Majors 1 |  |
| or CHEM 2111 | Organic Chemistry 1            |  |
| CHEM 2114    | Organic Chemistry for Majors 2 |  |
| or CHEM 2112 | Organic Chemistry 2            |  |

## Physical Chemistry - Choose one of the following: 3

|   |   |      |
|---|---|------|
| CHEM 4431   | Physical Chemistry: Fundamentals with Applications in Biological Sciences |      |
| CHEM 4433 & 4434  | Physical Chemistry 1 and Physical Chemistry 2                             |      |
| Biological Sciences Laboratory Course - Choose one course from the following: |   | 3    |
| BIOL 3202   | Experimental Genetics   |      |
| BIOL 3302   | Experimental Cell Biology   |      |
| BIOL 3502   | Experimental Neurobiology   |      |
| BIOL 3702   | Experimental Physiology   |      |
| BIOL 4102   | Experimental Molecular Biology  |      |
| BIOL 4995   | Independent Study in Biology  |      |
| CHEM 4995   | Independent Study in Chemistry  |      |
| Elective Courses - Choose any three of the following not previously taken:    |   | 9-12 |
| Biology Courses:  |   |      |
| BIOL 3202   | Experimental Genetics   |      |
| BIOL 3302   | Experimental Cell Biology   |      |
| BIOL 3401   | Advanced Ecology  |      |
| BIOL 3406   | Plant Biology   |      |
| BIOL 3501   | Neurobiology  |      |
| BIOL 3502   | Experimental Neurobiology   |      |
| BIOL 3601   | Animal Development  |      |
| BIOL 3701   | Human Physiology  |      |
| BIOL 3702   | Experimental Physiology   |      |
| BIOL 3801   | Microbiology  |      |
| BIOL 4703   | Exercise Physiology   |      |
| BIOL 4806   | Immunobiology   |      |
| BIOL 4995   | Independent Study in Biology  |      |
| or BISC 4995  | Independent Study in Biomedical Sciences                                  |      |
| Chemistry Courses:  |   |      |
| CHEM 3210   | Instrumental Analysis   |      |
| CHEM 4130   | Characterization of Organic Compounds                                     |      |
| CHEM 4330   | Inorganic Chemistry   |      |

|                      |                                   |       |
|----------------------|-----------------------------------|-------|
| CHEM 4430            | Introduction to Quantum Chemistry |       |
| CHEM 4530            | Introduction to Biochemistry      |       |
| Mathematics Courses: |                                   |       |
| MATH 2450            | Calculus 3                        |       |
| MATH 2451            | Differential Equations            |       |
| MATH 4740            | Biostatistical Methods and Models |       |
| Total Credit Hours   |                                   | 53-56 |

**Notes:**

- Students who take CHEM 4433 Physical Chemistry 1, CHEM 4434 Physical Chemistry 2 and MATH 2450 Calculus 3 are required to take only one additional elective in biological sciences, chemistry or mathematics.
- A second BIOL 4995 Independent Study in Biology course if BIOL 4995 previously taken as a laboratory course.
- Students electing this curriculum are expected to complete all Arts and Sciences core curriculum requirements.
- Honors courses will be available from both departments by contract with the instructors. Courses available for honors credit will be identified.

**Cognate Course Requirements:**

Mathematics Courses:

|   |  |    |
|---|--|----|
| MATH 1450                                       | Calculus 1   | 4  |
| MATH 1451                                       | Calculus 2   | 4  |
| Physics Sequence - Choose one of the following: |  | 8  |
| PHYS 1001<br>& 1002                             | General Physics 1<br>and General Physics 2   |    |
| PHYS 1003<br>& 1004                             | General Physics with Introductory Calculus 1<br>and General Physics with Introductory Calculus 2 |    |
| Total Credit Hours                              |  | 16 |

**Typical Program for Biochemistry/Molecular Biology Majors**

| Freshman   |       |             |       |
|------------|-------|-------------|-------|
| First Term | Hours | Second Term | Hours |
| BIOL 1001  | 3     | BIOL 1002   | 3     |
| CHEM 1001  | 4     | CHEM 1002   | 4     |
| MATH 1450  | 4     | MATH 1451   | 4     |

|  |              |   |              |
|--|--------------|---|--------------|
| ENGL 1001                                  | 3            | ENGL 1002   | 3            |
| Foreign Language                           | 3-4          | Foreign Language  | 3-4          |
|  | 17-18        |   | 17-18        |
| <b>Sophomore</b>                           |              |   |              |
| <b>First Term</b>                          | <b>Hours</b> | <b>Second Term</b>                                      | <b>Hours</b> |
| CHEM 2111 or 2113                          | 4            | HIST 1001 or 1002                                       | 3            |
| PHYS 1001 or 1003                          | 4            | CHEM 2112 or 2114                                       | 4            |
| BIOL 2301                                  | 3            | PHYS 1002 or 1004                                       | 4            |
| PHIL 1001                                  | 3            | PHIL 2310   | 3            |
| THEO 1001                                  | 3            | BIOL 2201   | 3            |
|  | 17           |   | 17           |
| <b>Junior</b>                              |              |   |              |
| <b>First Term</b>                          | <b>Hours</b> | <b>Second Term</b>                                      | <b>Hours</b> |
| BIOL 4101                                  | 3            | Biological Sci. laboratory course<br>(upper division)** | 3            |
| CHEM 4431*                                 | 3            | History/ Social-Behavioral Science                      | 3            |
| Theology (second level)                    | 3            | CHEM 3201   | 4            |
| Literature                                 | 3            | Literature  | 3            |
| Elective                                   | 3            | Elective  | 3            |
|  | 15           |   | 16           |
| <b>Senior</b>                              |              |   |              |
| <b>First Term</b>                          | <b>Hours</b> | <b>Second Term</b>                                      | <b>Hours</b> |
| BIOL 4102                                  | 3            | Biochemistry/Molecular Biology<br>electives             | 6            |
| Biochemistry/Molecular Biology<br>elective | 3-4          | Philosophy (upper division)                             | 3            |
| Theology (third level)                     | 3            | Social-Behavioral Science                               | 3            |
| Elective                                   | 3            | Elective  | 3            |
| Diverse Cultures elective                  | 3            |   |              |
|  | 15-16        |   | 15           |
| Total credit hours: 129-132                |              |   |              |

- \* Many students, including those continuing on to graduate school, should consider the option of two terms of physical chemistry ( CHEM 4433 Physical Chemistry 1 and CHEM 4434 Physical Chemistry 2) which require an additional term of calculus ( MATH 2450 Calculus 3). Students who take CHEM 4433 Physical Chemistry 1, CHEM 4434 Physical Chemistry 2, and MATH 2450 Calculus 3 are required to take only one additional elective in biological sciences, chemistry or mathematics.
  
- \*\* BIOL 4995 Independent Study in Biology or CHEM 4995 Independent Study in Chemistry may be substituted.

## Economics

**Chairperson: Abdur R. Chowdhury, Ph.D.**

Department of Economics website (<http://business.marquette.edu/departments/economics>)

Some disciplines train you to be a specialist. The economics discipline is a way of thinking about the world and the factors that influence and shape human actions. Economists have applied their science to the study of many forms of human endeavor. A major in economics gives students a way of analytically reasoning through problems. Whether they are interested in a career in private industry, government, public policy or the nonprofit sector, a degree in economics will provide them with the tools to succeed. Being in a vibrant metropolitan area offers a great many advantages to our students, including access to internships with many top firms and organizations within the Milwaukee metro area. Our internships are carefully designed to guarantee that students attain valuable work experience. Students can even gain an inside track on jobs with those firms once they graduate. Our alumni have gone on to successful careers in many different areas including, but not limited to, policy analysts, practicing attorney, futures traders, banking analysts and business consultants.

## Major in Economics

The major in Economics consists of 27 credit hours: four required courses (12 credit hours) and 15 additional credit hours of upper division economics courses. In addition, 9-11 credit hours in basic statistics and mathematics courses are required as listed below.

**Note:**

- Students contemplating graduate study in economics should take MATH 1450 Calculus 1 and MATH 1451 Calculus 2.

Required:

|  |                                     |    |
|--|-------------------------------------|----|
| ECON 2003  | Principles of Microeconomics        | 3  |
| ECON 2004  | Principles of Macroeconomics        | 3  |
| ECON 3003  | Intermediate Microeconomic Analysis | 3  |
| ECON 3004  | Intermediate Macroeconomic Analysis | 3  |
| Electives - Choose five upper-division ECON courses. |                                     | 15 |
| Total Credit Hours                                   |                                     | 27 |

Required Mathematics and Statistics Courses

|   |  |      |
|---|--|------|
| MATH 1700                                   | Modern Elementary Statistics (or equivalent)                     | 3    |
| Choose one of the following MATH sequences: |  | 6-8  |
| MATH 1390<br>& MATH 1400                    | Finite Mathematics<br>and Elements of Calculus 1 (or equivalent) |      |
| MATH 1450<br>& MATH 1451                    | Calculus 1<br>and Calculus 2                                     |      |
| Total Credit Hours                          |  | 9-11 |

## Minor in Economics

The minor in Economics consists of 18 credit hours: two required courses (6 credit hours) and four upper division economics electives (12 credit hours). In addition to the economics course requirements, a basic statistics course (3 credit hours) is required as listed below.

Required:

|  |                              |    |
|--|------------------------------|----|
| ECON 2003  | Principles of Microeconomics | 3  |
| ECON 2004  | Principles of Macroeconomics | 3  |
| Electives - Choose four upper-division ECON courses. |                              | 12 |
| Total Credit Hours                                   |                              | 18 |

Additional Statistics Course Requirement:

|           |  |   |
|-----------|--|---|
| MATH 1700 | Modern Elementary Statistics (or equivalent) | 3 |
|-----------|--|---|

### Note:

- Students minoring in Economics are urged to satisfy the Mathematics-Computer requirement of the Klingler College of Arts and Sciences by taking one of the following mathematics sequences listed below:

|                          |  |   |
|--------------------------|--|---|
| MATH 1390<br>& MATH 1400 | Finite Mathematics<br>and Elements of Calculus 1 | 6 |
| or                       |  |   |
| MATH 1450<br>& MATH 1451 | Calculus 1<br>and Calculus 2                     | 8 |

## Department of Public Instruction Certification

To pursue Department of Public Instruction certification, College of Education students are required to complete the following requirements for a major in Economics. The major consists of 27 credit hours: four required courses (12 credits) and 15 additional credit hours of upper-division work selected from Groups I - III. An additional 9-11 credit hours in basic statistics and mathematics courses are required as listed below.

Required:

|           |                                     |   |
|-----------|-------------------------------------|---|
| ECON 2003 | Principles of Microeconomics        | 3 |
| ECON 2004 | Principles of Macroeconomics        | 3 |
| ECON 3003 | Intermediate Microeconomic Analysis | 3 |
| ECON 3004 | Intermediate Macroeconomic Analysis | 3 |

Upper-Division Work from Groups I-III as listed below:

|  |  |      |
|--|--|------|
| Group I (3 credit hours)                     |  | 3    |
| ECON 4008                                    | Economics and Law  |      |
| ECON 4070                                    | Economics and Ethics   |      |
| ECON 4075                                    | The Economics of Religion  |      |
| Group II (6 credit hours)                    |  | 6    |
| ECON 4006                                    | Public Policies Toward American Industry                         |      |
| ECON 4010                                    | Public Finance   |      |
| ECON 4012                                    | Urban and Regional Economics                                     |      |
| ECON 4016                                    | Environmental and Natural Resource Economics                     |      |
| ECON 4020                                    | Economics of Labor Markets                                       |      |
| ECON 4080                                    | Money, Banking and Monetary Policy                               |      |
| Group III (3 credit hours)                   |  | 3    |
| ECON 4040                                    | International Economic Issues                                    |      |
| ECON 4042                                    | International Antitrust and Competition Policy                   |      |
| ECON 4044                                    | International Currency Markets                                   |      |
| ECON 4045                                    | Comparative Economic Development                                 |      |
| ECON 4046                                    | International Trade  |      |
| ECON 4048                                    | The Russian Economy  |      |
| One additional upper-division ECON elective. |  | 3    |
| Total Credit Hours                           |  | 27   |
| Additional Mathematics Courses Required:     |  | 6-8  |
| Choose one of the following sequences:       |  |      |
| MATH 1390<br>& MATH 1400                     | Finite Mathematics<br>and Elements of Calculus 1 (or equivalent) |      |
| MATH 1450<br>& MATH 1451                     | Calculus 1<br>and Calculus 2                                     |      |
| Required Statistics Course:                  |  |      |
| MATH 1700                                    | Modern Elementary Statistics (or equivalent)                     | 3    |
| Total Credit Hours                           |  | 9-11 |



## **Five-Year B.A./M.S.A.E. Program**

The Department of Economics offers a special five-year program enabling students to earn an undergraduate degree and a Master of Science degree in Applied Economics (MSAE). For information, consult the Graduate Bulletin or contact the Department of Economics.

## English

Chairperson: Krista L. Ratcliffe, Ph.D.

Department of English website (<http://www.marquette.edu/english/>)

The Department of English at Marquette University is a community of scholar-teachers and students who embrace the traditional Jesuit conception of liberal education inspired by St. Ignatius of Loyola. Grounded in this tradition, the department focuses on the study of “humane letters,” which is accorded a central and indispensable place in Jesuit education and defined as the study of rhetoric, poetry, grammar and history. Informed by this tradition as well as by contemporary literary and language studies, the department includes nationally and internationally prominent faculty and offers the following undergraduate programs of study: two majors (English Literature and Writing-Intensive English) and three minors (Literature, The Literature of Diverse Cultures and Writing-Intensive English). The Literature major studies major periods, authors and kinds of English and American literature with an emphasis on literary-historical-cultural analysis. The Writing-Intensive English major studies both literature and writing with emphases on rhetoric and composition, creative writing and/or professional writing. Both majors and the three minors provide opportunities for students to develop skills in critical reasoning, researching and evaluating information, written and spoken communication and creative writing. The course work is designed to prepare students for graduate studies or a wide variety of careers in areas including writing, editing, education, nonprofit work, business and law.

### Notes:

- All literature courses must be taken from English department offerings. Foreign language literature courses do not fulfill requirements for these majors and minors.
- Students pursuing teaching certification in English by the Wisconsin Department of Public Instruction for an Elementary Education major must complete the Major in Literature requirements as listed below.
- Students pursuing teaching certification in English by the Wisconsin Department of Public Instruction for a Secondary Education major must complete the Major in Writing-Intensive English requirements found under the Department of Public Instruction-Secondary Education listed below.

## Major in Literature

The major in literature consists of 30 credit hours (excluding ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2 or equivalents), divided according to Groups I - VI as listed below:

### Group I - Surveys or Introductions

9

Two of the following historical literature surveys :

|           |                                       |
|-----------|---------------------------------------|
| ENGL 2410 | Introduction to British Literature 1  |
| ENGL 2420 | Introduction to British Literature 2  |
| ENGL 2510 | Introduction to American Literature 1 |
| ENGL 2520 | Introduction to American Literature 2 |

One additional course from the above list or the following:

|           |                                     |
|-----------|-------------------------------------|
| ENGL 2310 | Introduction to Global Literature   |
| ENGL 2710 | Introduction to Literature: Fiction |

|   |  |   |
|---|--|---|
| ENGL 2730   | Introduction to Literature: Poetry                           |   |
| ENGL 2740   | Reading Film as Narrative                                    |   |
| ENGL 2931   | Topics in Literature and Culture                             |   |
| Group II - Language Study   |  | 3 |
| ENGL 4110   | English Linguistics  |   |
| ENGL 4120   | Structure of the English Language                            |   |
| ENGL 4130   | History of the English Language                              |   |
| ENGL 4170   | Studies in Language  |   |
| Group III - Individual Authors  |  | 3 |
| ENGL 4610   | Individual Authors   |   |
| ENGL 4620   | Chaucer  |   |
| ENGL 4640   | Milton   |   |
| Group IV - English or American Literature before 1800:                                      |  | 3 |
| Choose one of the following:  |  |   |
| ENGL 4410   | British Literature to 1500                                   |   |
| ENGL 4420   | Renaissance Literature: The 16th Century                     |   |
| ENGL 4430   | Renaissance Literature: The 17th Century                     |   |
| ENGL 4440   | The Ages of Dryden and Pope: 1660-1744                       |   |
| ENGL 4450   | The Age of Johnson: 1744-1790                                |   |
| ENGL 4510   | Colonial and American Literature from the Beginnings to 1798 |   |
| ENGL 4620   | Chaucer  |   |
| ENGL 4640   | Milton   |   |
| Or one of the following when the course deals with pre-1800 English or American literature: |  |   |
| ENGL 4610   | Individual Authors   |   |
| ENGL 4710   | Studies in Genre   |   |
| ENGL 4800   | Studies in Literature and Culture                            |   |
| ENGL 4820   | Studies in Race and/or Ethnic Literature                     |   |
| ENGL 4870   | Studies in Women and Literature                              |   |
| ENGL 4931   | Topics in Literature or Writing                              |   |
| Group V - Shakespeare   |  | 3 |
| ENGL 4630   | Shakespeare's Major Plays                                    |   |
| Group VI - Electives  |  | 9 |

Any three upper-division courses, no more than one of which may be a "writing" course:

|           |   |
|-----------|---|
| ENGL 4110 | English Linguistics   |
| ENGL 4120 | Structure of the English Language                               |
| ENGL 4130 | History of the English Language                                 |
| ENGL 4170 | Studies in Language   |
| ENGL 4310 | Studies in Global Literature                                    |
| ENGL 4410 | British Literature to 1500                                      |
| ENGL 4420 | Renaissance Literature: The 16th Century                        |
| ENGL 4430 | Renaissance Literature: The 17th Century                        |
| ENGL 4440 | The Ages of Dryden and Pope: 1660-1744                          |
| ENGL 4450 | The Age of Johnson: 1744-1790                                   |
| ENGL 4460 | The Romantic Period: 1790-1837                                  |
| ENGL 4470 | Victorian Literature  |
| ENGL 4480 | The Modernist Period in British Literature                      |
| ENGL 4490 | The Postmodernist Period in British Literature                  |
| ENGL 4510 | Colonial and American Literature from the Beginnings to 1798    |
| ENGL 4520 | American Literature from 1798 to 1865                           |
| ENGL 4530 | American Literature from 1865 to 1914                           |
| ENGL 4550 | Twentieth-Century American Literature: The Modern Period        |
| ENGL 4560 | The Contemporary Period in American Literature: 1945 to Present |
| ENGL 4610 | Individual Authors  |
| ENGL 4620 | Chaucer   |
| ENGL 4630 | Shakespeare's Major Plays                                       |
| ENGL 4640 | Milton  |
| ENGL 4710 | Studies in Genre  |
| ENGL 4720 | Literary Criticism  |
| ENGL 4750 | American Drama  |
| ENGL 4760 | British Drama   |
| ENGL 4780 | Literature in Film  |
| ENGL 4800 | Studies in Literature and Culture                               |

|                                |  |
|--------------------------------|--|
| ENGL 4810                      | Race, Ethnicity, and Identity in American Literature and Culture |
| ENGL 4820                      | Studies in Race and/or Ethnic Literature                         |
| ENGL 4830                      | African-American Literature                                      |
| ENGL 4840                      | Post-Colonial Literature   |
| ENGL 4860                      | Survey of Women's Literature                                     |
| ENGL 4870                      | Studies in Women and Literature                                  |
| ENGL 4931                      | Topics in Literature or Writing                                  |
| ENGL 4953                      | Seminar in Literature  |
| ENGL 4995                      | Independent Study in English                                     |
| ENGL 4999                      | Senior Thesis  |
| Writing Courses (one or none): |  |
| ENGL 3210                      | Advanced Composition   |
| ENGL 3220                      | Writing for the Professions                                      |
| ENGL 4210                      | The Processes of Writing   |
| ENGL 4220                      | The Art of Rhetoric: Theory and Application                      |
| ENGL 4250                      | Creative Writing: Fiction  |
| ENGL 4260                      | Creative Writing: Poetry   |
| ENGL 4954                      | Seminar in Writing   |
| ENGL 4986                      | Writing Internship   |
| <b>Total Credit Hours</b>      |  |
| <b>30</b>                      |  |

## Minor in Literature

The minor in literature consists of 18 credit hours (excluding ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2 or equivalents), divided according to Groups I - III as listed below:

### Group I -Surveys or Introductions

6

|  |                                       |
|--|---------------------------------------|
| Any two lower-division literature surveys: |                                       |
| ENGL 2310                                  | Introduction to Global Literature     |
| ENGL 2410                                  | Introduction to British Literature 1  |
| ENGL 2420                                  | Introduction to British Literature 2  |
| ENGL 2510                                  | Introduction to American Literature 1 |

|   |   |   |
|---|---|---|
| ENGL 2520   | Introduction to American Literature 2                           |   |
| ENGL 2710   | Introduction to Literature: Fiction                             |   |
| ENGL 2720   | Introduction to Literature: Drama                               |   |
| ENGL 2730   | Introduction to Literature: Poetry                              |   |
| ENGL 2740   | Reading Film as Narrative                                       |   |
| ENGL 2931   | Topics in Literature and Culture                                |   |
| Group II - Shakespeare  |   | 3 |
| ENGL 4630   | Shakespeare's Major Plays                                       |   |
| Group III - Electives   |   | 9 |
| Any three upper-division literature courses, no more than one of which may be a "writing" course: |   |   |
| ENGL 4110   | English Linguistics   |   |
| ENGL 4120   | Structure of the English Language                               |   |
| ENGL 4130   | History of the English Language                                 |   |
| ENGL 4170   | Studies in Language   |   |
| ENGL 4310   | Studies in Global Literature                                    |   |
| ENGL 4410   | British Literature to 1500                                      |   |
| ENGL 4420   | Renaissance Literature: The 16th Century                        |   |
| ENGL 4430   | Renaissance Literature: The 17th Century                        |   |
| ENGL 4440   | The Ages of Dryden and Pope: 1660-1744                          |   |
| ENGL 4450   | The Age of Johnson: 1744-1790                                   |   |
| ENGL 4460   | The Romantic Period: 1790-1837                                  |   |
| ENGL 4470   | Victorian Literature  |   |
| ENGL 4480   | The Modernist Period in British Literature                      |   |
| ENGL 4490   | The Postmodernist Period in British Literature                  |   |
| ENGL 4510   | Colonial and American Literature from the Beginnings to 1798    |   |
| ENGL 4520   | American Literature from 1798 to 1865                           |   |
| ENGL 4530   | American Literature from 1865 to 1914                           |   |
| ENGL 4550   | Twentieth-Century American Literature: The Modern Period        |   |
| ENGL 4560   | The Contemporary Period in American Literature: 1945 to Present |   |
| ENGL 4610   | Individual Authors  |   |
| ENGL 4620   | Chaucer   |   |
| ENGL 4630   | Shakespeare's Major Plays                                       |   |

|                               |  |
|-------------------------------|--|
| ENGL 4640                     | Milton   |
| ENGL 4710                     | Studies in Genre   |
| ENGL 4720                     | Literary Criticism   |
| ENGL 4750                     | American Drama   |
| ENGL 4760                     | British Drama  |
| ENGL 4780                     | Literature in Film   |
| ENGL 4800                     | Studies in Literature and Culture                                |
| ENGL 4810                     | Race, Ethnicity, and Identity in American Literature and Culture |
| ENGL 4820                     | Studies in Race and/or Ethnic Literature                         |
| ENGL 4830                     | African-American Literature                                      |
| ENGL 4840                     | Post-Colonial Literature   |
| ENGL 4860                     | Survey of Women's Literature                                     |
| ENGL 4870                     | Studies in Women and Literature                                  |
| ENGL 4931                     | Topics in Literature or Writing                                  |
| ENGL 4953                     | Seminar in Literature  |
| ENGL 4995                     | Independent Study in English                                     |
| ENGL 4999                     | Senior Thesis  |
| Writing Courses (one or none) |  |
| ENGL 3210                     | Advanced Composition   |
| ENGL 3220                     | Writing for the Professions                                      |
| ENGL 4210                     | The Processes of Writing   |
| ENGL 4220                     | The Art of Rhetoric: Theory and Application                      |
| ENGL 4250                     | Creative Writing: Fiction  |
| ENGL 4260                     | Creative Writing: Poetry   |
| ENGL 4931                     | Topics in Literature or Writing                                  |
| ENGL 4954                     | Seminar in Writing   |
| ENGL 4986                     | Writing Internship   |

## Minor in the Literature of Diverse Cultures

The minor in Literature of Diverse Cultures consists of 18 credit hours (excluding ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2 or equivalents), divided according to Groups I-III, as listed below:

### Group I - Survey or Introduction 3

One lower-division survey or introduction:

|           |                                       |
|-----------|---------------------------------------|
| ENGL 2310 | Introduction to Global Literature     |
| ENGL 2410 | Introduction to British Literature 1  |
| ENGL 2420 | Introduction to British Literature 2  |
| ENGL 2510 | Introduction to American Literature 1 |
| ENGL 2520 | Introduction to American Literature 2 |
| ENGL 2710 | Introduction to Literature: Fiction   |
| ENGL 2720 | Introduction to Literature: Drama     |
| ENGL 2730 | Introduction to Literature: Poetry    |
| ENGL 2740 | Reading Film as Narrative             |
| ENGL 2931 | Topics in Literature and Culture      |

### Group II - Race, Ethnicity and Identity in American Literature and Culture 3

|           |  |
|-----------|--|
| ENGL 4810 | Race, Ethnicity, and Identity in American Literature and Culture |
|-----------|--|

### Group III - Electives 12

Four upper-division literature electives, three of which should be from the following:

|           |  |
|-----------|--|
| ENGL 4310 | Studies in Global Literature             |
| ENGL 4820 | Studies in Race and/or Ethnic Literature |
| ENGL 4830 | African-American Literature              |
| ENGL 4840 | Post-Colonial Literature                 |

Or any of the following when their course content is appropriate:

|           |                                   |
|-----------|-----------------------------------|
| ENGL 4170 | Studies in Language               |
| ENGL 4610 | Individual Authors                |
| ENGL 4710 | Studies in Genre                  |
| ENGL 4780 | Literature in Film                |
| ENGL 4800 | Studies in Literature and Culture |



|   |                                 |
|---|---------------------------------|
| ENGL 4860   | Survey of Women's Literature    |
| ENGL 4870   | Studies in Women and Literature |
| ENGL 4931   | Topics in Literature or Writing |
| ENGL 4953   | Seminar in Literature           |
| ENGL 4995   | Independent Study in English    |
| Or other courses when approved by the director of undergraduate studies |                                 |
| <b>Total Credit Hours</b>   |                                 |
| 18  |                                 |

## Department of Public Instruction Certification - English Literature Minor

To pursue Department of Public Instruction certification, College of Education students are required to complete the following requirements for an English literature minor. The minor consists of 24-25 credit hours (excluding ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2 or equivalents), divided according to Groups I-VIII, as listed below.

### Note:

- College of Education students pursuing an English Literature minor MUST fulfill the UCCS-LPA requirement (3 credit hours) with one of the following lower-division historical literature survey courses: ENGL 2410 Introduction to British Literature 1, ENGL 2420 Introduction to British Literature 2, ENGL 2510 Introduction to American Literature 1 or ENGL 2520 Introduction to American Literature 2.

### Group I - Language Study 3

One of the following:

|           |                                   |
|-----------|-----------------------------------|
| ENGL 4110 | English Linguistics               |
| ENGL 4120 | Structure of the English Language |
| ENGL 4130 | History of the English Language   |
| ENGL 4170 | Studies in Language               |

### Group II - British Literature 3

One upper-division elective in British Literature

|           |  |
|-----------|--|
| ENGL 4410 | British Literature to 1500               |
| ENGL 4420 | Renaissance Literature: The 16th Century |
| ENGL 4430 | Renaissance Literature: The 17th Century |
| ENGL 4440 | The Ages of Dryden and Pope: 1660-1744   |
| ENGL 4450 | The Age of Johnson: 1744-1790            |

|                                  |  |     |
|----------------------------------|--|-----|
| ENGL 4460                        | The Romantic Period: 1790-1837                                   |     |
| ENGL 4470                        | Victorian Literature   |     |
| ENGL 4480                        | The Modernist Period in British Literature                       |     |
| ENGL 4490                        | The Postmodernist Period in British Literature                   |     |
| ENGL 4620                        | Chaucer  |     |
| ENGL 4640                        | Milton   |     |
| ENGL 4760                        | British Drama  |     |
| Or, when appropriate:            |  |     |
| ENGL 4170                        | Studies in Language  |     |
| ENGL 4610                        | Individual Authors   |     |
| ENGL 4710                        | Studies in Genre   |     |
| ENGL 4860                        | Survey of Women's Literature                                     |     |
| ENGL 4870                        | Studies in Women and Literature                                  |     |
| ENGL 4931                        | Topics in Literature or Writing                                  |     |
| ENGL 4953                        | Seminar in Literature  |     |
| Group III - Advanced Composition |  | 3   |
| ENGL 3210                        | Advanced Composition   |     |
| Group IV - Rhetoric              |  | 3-4 |
| One of the following:            |  |     |
| ENGL 4210                        | The Processes of Writing   |     |
| ENGL 4220                        | The Art of Rhetoric: Theory and Application                      |     |
| Group V - Multicultural          |  | 3   |
| ENGL 4810                        | Race, Ethnicity, and Identity in American Literature and Culture |     |
| ENGL 4820                        | Studies in Race and/or Ethnic Literature                         |     |
| ENGL 4830                        | African-American Literature                                      |     |
| Or, when appropriate:            |  |     |
| ENGL 4931                        | Topics in Literature or Writing                                  |     |
| Group VI - Shakespeare           |  | 3   |
| ENGL 4630                        | Shakespeare's Major Plays  |     |
| Group VII - Methods              |  | 3   |
| ENGL 4027                        | Teaching English in the Secondary School                         |     |

## Group VIII - American Literature

3

One of the following upper-division electives in American Literature:

|           |  |
|-----------|--|
| ENGL 4510 | Colonial and American Literature from the Beginnings to 1798     |
| ENGL 4520 | American Literature from 1798 to 1865                            |
| ENGL 4530 | American Literature from 1865 to 1914                            |
| ENGL 4550 | Twentieth-Century American Literature: The Modern Period         |
| ENGL 4560 | The Contemporary Period in American Literature: 1945 to Present  |
| ENGL 4750 | American Drama   |
| ENGL 4810 | Race, Ethnicity, and Identity in American Literature and Culture |
| ENGL 4820 | Studies in Race and/or Ethnic Literature                         |
| ENGL 4830 | African-American Literature                                      |

Or, when course content is American:

|           |                                 |
|-----------|---------------------------------|
| ENGL 4610 | Individual Authors              |
| ENGL 4710 | Studies in Genre                |
| ENGL 4780 | Literature in Film              |
| ENGL 4860 | Survey of Women's Literature    |
| ENGL 4870 | Studies in Women and Literature |
| ENGL 4931 | Topics in Literature or Writing |
| ENGL 4999 | Senior Thesis                   |

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Total Credit Hours

24-25

## Major in Writing-Intensive English

The Writing-Intensive English major consists of thirty-six hours (excluding ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2 or equivalents), divided according to Groups I - VII, as listed below.

**Note:**

- All of the JOUR classes listed have ENGL 3210 Advanced Composition as a prerequisite; JOUR 4510 Magazine Design and Production and JOUR 4520 Online Editing and Design also have JOUR 4200 Publications Editing as a prerequisite.

## Group I - Surveys and Introductions

6

Any two lower division literature surveys:

|           |                                   |
|-----------|-----------------------------------|
| ENGL 2310 | Introduction to Global Literature |
|-----------|-----------------------------------|

|   |  |   |
|---|--|---|
| ENGL 2410   | Introduction to British Literature 1                         |   |
| ENGL 2420   | Introduction to British Literature 2                         |   |
| ENGL 2510   | Introduction to American Literature 1                        |   |
| ENGL 2520   | Introduction to American Literature 2                        |   |
| ENGL 2710   | Introduction to Literature: Fiction                          |   |
| ENGL 2720   | Introduction to Literature: Drama                            |   |
| ENGL 2730   | Introduction to Literature: Poetry                           |   |
| ENGL 2740   | Reading Film as Narrative                                    |   |
| ENGL 2931   | Topics in Literature and Culture                             |   |
| Group II - Shakespeare  |  | 3 |
| ENGL 4630   | Shakespeare's Major Plays                                    |   |
| Group III - Individual Authors  |  | 3 |
| One of the following courses:   |  |   |
| ENGL 4610   | Individual Authors   |   |
| ENGL 4620   | Chaucer  |   |
| ENGL 4640   | Milton   |   |
| Group IV - English or American Literature before 1800                                       |  | 3 |
| One of the following:   |  |   |
| ENGL 4410   | British Literature to 1500                                   |   |
| ENGL 4420   | Renaissance Literature: The 16th Century                     |   |
| ENGL 4430   | Renaissance Literature: The 17th Century                     |   |
| ENGL 4440   | The Ages of Dryden and Pope: 1660-1744                       |   |
| ENGL 4450   | The Age of Johnson: 1744-1790                                |   |
| ENGL 4510   | Colonial and American Literature from the Beginnings to 1798 |   |
| ENGL 4620   | Chaucer  |   |
| ENGL 4640   | Milton   |   |
| Or one of the following when the course deals with pre-1800 English or American literature: |  |   |
| ENGL 4610   | Individual Authors   |   |
| ENGL 4710   | Studies in Genre   |   |
| ENGL 4800   | Studies in Literature and Culture                            |   |

|   |   |   |
|---|---|---|
| ENGL 4820   | Studies in Race and/or Ethnic Literature                        |   |
| ENGL 4870   | Studies in Women and Literature                                 |   |
| ENGL 4931   | Topics in Literature or Writing                                 |   |
| Group V - Language Study                          |   | 3 |
| One of the following courses:                     |   |   |
| ENGL 4110   | English Linguistics   |   |
| ENGL 4120   | Structure of the English Language                               |   |
| ENGL 4130   | History of the English Language                                 |   |
| ENGL 4170   | Studies in Language   |   |
| Group VI - Electives                              |   | 6 |
| Choose any two upper-division literature courses: |   |   |
| ENGL 4110   | English Linguistics   |   |
| ENGL 4120   | Structure of the English Language                               |   |
| ENGL 4130   | History of the English Language                                 |   |
| ENGL 4170   | Studies in Language   |   |
| ENGL 4310   | Studies in Global Literature                                    |   |
| ENGL 4410   | British Literature to 1500                                      |   |
| ENGL 4420   | Renaissance Literature: The 16th Century                        |   |
| ENGL 4430   | Renaissance Literature: The 17th Century                        |   |
| ENGL 4440   | The Ages of Dryden and Pope: 1660-1744                          |   |
| ENGL 4450   | The Age of Johnson: 1744-1790                                   |   |
| ENGL 4460   | The Romantic Period: 1790-1837                                  |   |
| ENGL 4470   | Victorian Literature  |   |
| ENGL 4480   | The Modernist Period in British Literature                      |   |
| ENGL 4490   | The Postmodernist Period in British Literature                  |   |
| ENGL 4510   | Colonial and American Literature from the Beginnings to 1798    |   |
| ENGL 4520   | American Literature from 1798 to 1865                           |   |
| ENGL 4530   | American Literature from 1865 to 1914                           |   |
| ENGL 4550   | Twentieth-Century American Literature: The Modern Period        |   |
| ENGL 4560   | The Contemporary Period in American Literature: 1945 to Present |   |
| ENGL 4610   | Individual Authors  |   |
| ENGL 4620   | Chaucer   |   |

|           |  |
|-----------|--|
| ENGL 4640 | Milton   |
| ENGL 4710 | Studies in Genre   |
| ENGL 4720 | Literary Criticism   |
| ENGL 4750 | American Drama   |
| ENGL 4760 | British Drama  |
| ENGL 4780 | Literature in Film   |
| ENGL 4800 | Studies in Literature and Culture                                |
| ENGL 4810 | Race, Ethnicity, and Identity in American Literature and Culture |
| ENGL 4820 | Studies in Race and/or Ethnic Literature                         |
| ENGL 4830 | African-American Literature                                      |
| ENGL 4840 | Post-Colonial Literature   |
| ENGL 4860 | Survey of Women's Literature                                     |
| ENGL 4870 | Studies in Women and Literature                                  |
| ENGL 4931 | Topics in Literature or Writing                                  |
| ENGL 4953 | Seminar in Literature  |
| ENGL 4999 | Senior Thesis  |

### Group VII - Writing 12

Required Course:

|           |                      |
|-----------|----------------------|
| ENGL 3210 | Advanced Composition |
|-----------|----------------------|

And three of the following:

|           |   |
|-----------|---|
| ENGL 3220 | Writing for the Professions                 |
| ENGL 4210 | The Processes of Writing                    |
| ENGL 4220 | The Art of Rhetoric: Theory and Application |
| ENGL 4250 | Creative Writing: Fiction                   |
| ENGL 4260 | Creative Writing: Poetry                    |
| ENGL 4954 | Seminar in Writing                          |
| ENGL 4986 | Writing Internship                          |

Or, when the course focuses on writing:

|           |                                 |
|-----------|---------------------------------|
| ENGL 4931 | Topics in Literature or Writing |
| ENGL 4995 | Independent Study in English    |
| ENGL 4999 | Senior Thesis                   |

Or, if not used in Group V:

|           |                                   |
|-----------|-----------------------------------|
| ENGL 4110 | English Linguistics               |
| ENGL 4120 | Structure of the English Language |
| ENGL 4130 | History of the English Language   |
| ENGL 4170 | Studies in Language               |

Or, no more than two among the following:

|           |                                |
|-----------|--------------------------------|
| JOUR 4120 | Feature Writing                |
| JOUR 4130 | Critical Writing               |
| JOUR 4160 | Narrative Nonfiction Reporting |
| JOUR 4510 | Magazine Design and Production |
| JOUR 4520 | Online Editing and Design      |

Total Credit Hours

36

## Department of Public Instruction Certification - Secondary Education

Students in the College of Education who are pursuing teaching certification for Secondary Education in English should follow the requirements as listed below. The major consists of 36 credit hours divided according to Groups I - VII:

### Group I - Surveys and Introductions

6

Choose one historical literature survey sequence:

|                          |  |
|--------------------------|--|
| ENGL 2410<br>& ENGL 2420 | Introduction to British Literature 1<br>and Introduction to British Literature 2 |
|--------------------------|--|

or

|                          |  |
|--------------------------|--|
| ENGL 2510<br>& ENGL 2520 | Introduction to American Literature 1<br>and Introduction to American Literature 2 |
|--------------------------|--|

### Group II - Shakespeare

3

|           |                           |
|-----------|---------------------------|
| ENGL 4630 | Shakespeare's Major Plays |
|-----------|---------------------------|

### Group III - Individual Authors

3

One of the following courses:

|           |                    |
|-----------|--------------------|
| ENGL 4610 | Individual Authors |
| ENGL 4620 | Chaucer            |

|           |        |
|-----------|--------|
| ENGL 4640 | Milton |
|-----------|--------|

### Group IV - English or American Literature before 1800

3

One of the following courses:

|           |  |
|-----------|--|
| ENGL 4410 | British Literature to 1500                                   |
| ENGL 4420 | Renaissance Literature: The 16th Century                     |
| ENGL 4430 | Renaissance Literature: The 17th Century                     |
| ENGL 4440 | The Ages of Dryden and Pope: 1660-1744                       |
| ENGL 4450 | The Age of Johnson: 1744-1790                                |
| ENGL 4510 | Colonial and American Literature from the Beginnings to 1798 |
| ENGL 4620 | Chaucer  |
| ENGL 4640 | Milton   |

Or one of the following when the course deals with pre-1800 English or American Literature:

|           |  |
|-----------|--|
| ENGL 4610 | Individual Authors                       |
| ENGL 4710 | Studies in Genre                         |
| ENGL 4800 | Studies in Literature and Culture        |
| ENGL 4820 | Studies in Race and/or Ethnic Literature |
| ENGL 4870 | Studies in Women and Literature          |
| ENGL 4931 | Topics in Literature or Writing          |

**Group V - Language Study 3**

One of the following courses:

|           |                                   |
|-----------|-----------------------------------|
| ENGL 4110 | English Linguistics               |
| ENGL 4120 | Structure of the English Language |
| ENGL 4130 | History of the English Language   |
| ENGL 4170 | Studies in Language               |

**Group VI - Electives 9**

Three upper-division literature electives as follows:

One of the electives must be a multicultural course:

|           |  |
|-----------|--|
| ENGL 4810 | Race, Ethnicity, and Identity in American Literature and Culture |
| ENGL 4820 | Studies in Race and/or Ethnic Literature                         |
| ENGL 4830 | African-American Literature                                      |

Or, when course content is multicultural:

|           |                                 |
|-----------|---------------------------------|
| ENGL 4931 | Topics in Literature or Writing |
|-----------|---------------------------------|

At least one of the electives must be an American literature course:

|           |  |
|-----------|--|
| ENGL 4510 | Colonial and American Literature from the Beginnings to 1798 |
|-----------|--|



|  |   |
|--|---|
| ENGL 4520  | American Literature from 1798 to 1865                           |
| ENGL 4530  | American Literature from 1865 to 1914                           |
| ENGL 4550  | Twentieth-Century American Literature: The Modern Period        |
| ENGL 4560  | The Contemporary Period in American Literature: 1945 to Present |
| ENGL 4750  | American Drama  |
| Or, when course content is American:   |   |
| ENGL 4610  | Individual Authors  |
| ENGL 4710  | Studies in Genre  |
| ENGL 4720  | Literary Criticism  |
| ENGL 4780  | Literature in Film  |
| ENGL 4800  | Studies in Literature and Culture                               |
| ENGL 4860  | Survey of Women's Literature                                    |
| ENGL 4870  | Studies in Women and Literature                                 |
| ENGL 4953  | Seminar in Literature   |
| ENGL 4999  | Senior Thesis   |
| A third elective may be selected from any of the upper-division literature courses (3xxx-4xxx), though at least one course from Groups III, IV, or VI must be British. |   |
| <b>Group VII - Writing</b>   |   |
| 9  |   |
| Three courses are required:  |   |
| ENGL 3210  | Advanced Composition  |
| ENGL 4210  | The Processes of Writing  |
| or ENGL 4220   | The Art of Rhetoric: Theory and Application                     |
| ENGL 4027  | Teaching English in the Secondary School                        |
| <hr/>  |   |
| <b>Total Credit Hours</b>  |   |
| <b>36</b>  |   |

## Minor in Writing-Intensive English

The minor consists of 18 credit hours (excluding ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2 or equivalents), divided according to Groups I - IV, as listed below:

### Note:

- For WINE minors taking Journalism courses who are not also Journalism majors, ENGL 3210 Advanced Composition is required first
- For JOUR 4510 Magazine Design and Production and JOUR 4520 Online Editing and Design, JOUR 4200 Publications Editing is also required.

## Group I - Survey or Introduction

3

Choose one lower-division survey or introduction course:

|           |                                       |
|-----------|---------------------------------------|
| ENGL 2310 | Introduction to Global Literature     |
| ENGL 2410 | Introduction to British Literature 1  |
| ENGL 2420 | Introduction to British Literature 2  |
| ENGL 2510 | Introduction to American Literature 1 |
| ENGL 2520 | Introduction to American Literature 2 |
| ENGL 2710 | Introduction to Literature: Fiction   |
| ENGL 2720 | Introduction to Literature: Drama     |
| ENGL 2730 | Introduction to Literature: Poetry    |
| ENGL 2740 | Reading Film as Narrative             |
| ENGL 2931 | Topics in Literature and Culture      |

## Group II - Advanced Composition

3

|           |                      |
|-----------|----------------------|
| ENGL 3210 | Advanced Composition |
|-----------|----------------------|

## Group III - Literature Elective

3

One upper-division literature elective:

|           |  |
|-----------|--|
| ENGL 4110 | English Linguistics                            |
| ENGL 4120 | Structure of the English Language              |
| ENGL 4130 | History of the English Language                |
| ENGL 4170 | Studies in Language                            |
| ENGL 4310 | Studies in Global Literature                   |
| ENGL 4410 | British Literature to 1500                     |
| ENGL 4420 | Renaissance Literature: The 16th Century       |
| ENGL 4430 | Renaissance Literature: The 17th Century       |
| ENGL 4440 | The Ages of Dryden and Pope: 1660-1744         |
| ENGL 4450 | The Age of Johnson: 1744-1790                  |
| ENGL 4460 | The Romantic Period: 1790-1837                 |
| ENGL 4470 | Victorian Literature                           |
| ENGL 4480 | The Modernist Period in British Literature     |
| ENGL 4490 | The Postmodernist Period in British Literature |

|                              |  |
|------------------------------|--|
| ENGL 4510                    | Colonial and American Literature from the Beginnings to 1798     |
| ENGL 4520                    | American Literature from 1798 to 1865                            |
| ENGL 4530                    | American Literature from 1865 to 1914                            |
| ENGL 4550                    | Twentieth-Century American Literature: The Modern Period         |
| ENGL 4560                    | The Contemporary Period in American Literature: 1945 to Present  |
| ENGL 4610                    | Individual Authors   |
| ENGL 4620                    | Chaucer  |
| ENGL 4630                    | Shakespeare's Major Plays  |
| ENGL 4640                    | Milton   |
| ENGL 4710                    | Studies in Genre   |
| ENGL 4720                    | Literary Criticism   |
| ENGL 4750                    | American Drama   |
| ENGL 4760                    | British Drama  |
| ENGL 4780                    | Literature in Film   |
| ENGL 4800                    | Studies in Literature and Culture                                |
| ENGL 4810                    | Race, Ethnicity, and Identity in American Literature and Culture |
| ENGL 4820                    | Studies in Race and/or Ethnic Literature                         |
| ENGL 4830                    | African-American Literature                                      |
| ENGL 4840                    | Post-Colonial Literature   |
| ENGL 4860                    | Survey of Women's Literature                                     |
| ENGL 4870                    | Studies in Women and Literature                                  |
| ENGL 4931                    | Topics in Literature or Writing                                  |
| ENGL 4953                    | Seminar in Literature  |
| ENGL 4999                    | Senior Thesis  |
| Group IV - Writing Electives |  |

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Three writing course electives, chosen from the following:

|           |   |
|-----------|---|
| ENGL 3220 | Writing for the Professions                 |
| ENGL 4210 | The Processes of Writing                    |
| ENGL 4220 | The Art of Rhetoric: Theory and Application |
| ENGL 4250 | Creative Writing: Fiction                   |
| ENGL 4260 | Creative Writing: Poetry                    |

|  |                                   |
|--|-----------------------------------|
| ENGL 4954  | Seminar in Writing                |
| ENGL 4986  | Writing Internship                |
| Or, when the course focuses on writing:                    |                                   |
| ENGL 4931  | Topics in Literature or Writing   |
| ENGL 4995  | Independent Study in English      |
| ENGL 4999  | Senior Thesis                     |
| One of the three courses may be chosen from the following: |                                   |
| ENGL 4110  | English Linguistics               |
| ENGL 4120  | Structure of the English Language |
| ENGL 4130  | History of the English Language   |
| ENGL 4170  | Studies in Language               |
| JOUR 4110  | Persuasive Writing                |
| JOUR 4120  | Feature Writing                   |
| JOUR 4160  | Narrative Nonfiction Reporting    |
| JOUR 4510  | Magazine Design and Production    |
| JOUR 4520  | Online Editing and Design         |
| <hr/> Total Credit Hours                                   |                                   |
|  |                                   |

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## Writing Courses

|           |   |   |
|-----------|---|---|
| ENGL 3210 | Advanced Composition                        | 3 |
| ENGL 3220 | Writing for the Professions                 | 3 |
| ENGL 4210 | The Processes of Writing                    | 4 |
| ENGL 4220 | The Art of Rhetoric: Theory and Application | 3 |
| ENGL 4250 | Creative Writing: Fiction                   | 3 |
| ENGL 4260 | Creative Writing: Poetry                    | 3 |
| ENGL 5220 | The Art of Rhetoric: Theory and Application | 3 |
| ENGL 5250 | Creative Writing: Fiction                   | 3 |
| ENGL 5260 | Creative Writing: Poetry                    | 3 |
| ENGL 4986 | Writing Internship                          | 3 |

# Foreign Languages and Literatures

**Chairperson: John S. Pustejovsky, Ph.D.**

Department of Foreign Languages and Literatures website (<http://www.marquette.edu/fola/>)

Welcome to Marquette, and the Department of Foreign Languages and Literatures! We are nearly forty educators who teach nine different languages, from Arabic to Spanish. All of us are committed to language skills for real communication, and classroom experiences that stimulate, challenge and broaden our students' world.

The Department offers nine languages: Arabic, Chinese (Mandarin), French, German, Classical Greek, Italian, Japanese, Latin and Spanish. Whether you are beginning our studies in a new language, or continuing one begun in high school, you'll discover that your language classes target useful communicative skills and open new perspectives on the world, including your own. Your first Marquette language class may have you chatting in real time with learners in Latin America, France, or Asia using our Global Virtual Immersion. You'll find that our courses range across subjects as diverse as "Late Roman Literature," "The Art of Genocide: Holocaust, Cambodia Rwanda," and Murder, Mystery and the New Detective Narrative in Hispanic Literature." This diversity reflects our faculty, which includes internationally known scholars, and educators recognized for excellence in teaching, advising and community service. But we know our students, and every semester faculty discover new ways to integrate language learning, community and social activities.

Our majors include Classical Languages, Classical Studies, French, German, Spanish Language and Literature, Spanish for the Professions: Business or Health Professions. It's relatively easy to combine a major (or minor) in a foreign language with a second major—international affairs, international business, biochemistry, biology, history, philosophy—and continue on to pursue careers in law, medicine, business, education, public service—the combinations are many! Arabic, Chinese, Italian and Japanese are taught through the intermediate level, but also include courses in civilization and literature in English translation. (The majority of our literature offerings are part of the Marquette University Core of Common Studies.)

Our graduates find their way to careers as diverse as the world today. Wherever their path leads, the ability to use other people's language has given it a sure beginning. Browse our website to meet our faculty and staff, explore the work we do and the courses where we will meet. We look forward to having you become part of our community of global learners!

## Placement in Foreign Language Courses (p. 67)

The goal of the Department of Foreign Languages and Literatures is to place students in the most appropriate level of foreign language study based on their previous exposure to the language. Refer to the university section of this bulletin: Placement in Foreign Language Courses; Foreign Language Requirement; and Placement Credit in Foreign Languages.

## Foreign Language Majors

### Major in Classical Languages (p. 200)

- Concentration 1: Classical Languages
- Concentration 2: Classical Languages for Education Majors

## **Major in Classical Studies (p. 200)**

## **Major in French (p. 204)**

- Concentration 1: Francophone Literatures, Cultures and Language
- Concentration 2: Business and Culture
- Concentration 3: Francophone Literatures, Cultures and Language for Education Majors

## **Major in German (p. 208)**

- Concentration 1: German Languages, Literature and Culture
- Concentration 2: Education Majors

## **Major in Spanish (p. 211) Language, Literature & Culture (p. 211)**

- Concentration 1: Spanish Language, Literature and Culture
- Concentration 2: Spanish Language, Literature and Culture for *Heritage Speakers*
- Concentration 3: Spanish Language, Literature and Culture for *Native Speakers*
- Concentration 4: Spanish Language, Literature and Culture for Education Majors

## **Major in Spanish (p. 211) For the Professions (p. 211)**

- Concentration 1: Spanish for the Business Professions
- Concentration 2: Spanish for the Health Professions
- Concentration 3: Spanish for the Professions for *Heritage Speakers*
- Concentration 4: Spanish for the Professions for *Native Speakers* of Spanish

### ***Notes to Majors in Spanish:***

- *Heritage learners* of Spanish are students of Hispanic background who have been educated in the United States and have been exposed to Spanish in their homes or communities from an early age, but who consider English their primary language.
- *Native speakers* of Spanish have been primarily educated in Spanish and consider Spanish their first language.

## **Foreign Language Minors**

The following minors are offered in the Department of Foreign Languages and Literatures:

**Minor in Classical Languages (p. 200)****Minor in Classical Studies (p. 200)****Minor in French (p. 204)****Minor in German (p. 208)****Minor in Spanish Language, Literature and Culture (p. 211)**

- Concentration 1: Spanish Language, Literature and Culture
- Concentration 2: Spanish Language, Literature and Culture for Heritage Speakers
- Concentration 3: Spanish Language, Literature and Culture for Native Speakers

**Minor in Spanish for the Professions (p. 211)**

- Concentration 1: Spanish for the Business Professions
- Concentration 2: Spanish for the Health Professions
- Concentration 3: Heritage Learners
- Concentration 4: Native Speakers of Spanish

***Notes to Minors in Spanish:***

- *Heritage learners* of Spanish are students of Hispanic background who have been educated in the United States and have been exposed to Spanish in their homes or communities from an early age, but who consider English their primary language.
- *Native speakers* of Spanish have been primarily educated in Spanish and consider Spanish their first language.

***Note to Foreign Language Minors:***

- Students are not allowed to get a minor in the same language that they have declared as their major (e.g. major in Spanish Language and Literature and minor in Spanish for the Professions).

**Arabic, Chinese, Italian and Japanese (p. 223)**

In addition to the majors and minors offered in Classics, French, German and Spanish, the Department of Foreign Languages and Literatures offers the four-course-sequence in the elementary and intermediate levels of **Arabic, Chinese, Italian** and **Japanese**. Courses taught in English are also offered about Chinese, Italian, Japanese and Middle Eastern cultures, civilizations and literatures.

**FOLA (p. 223) Courses**

Interdisciplinary courses within the department are listed under the FOLA subject heading. These courses cover such topics as women in foreign literature and the methodology for teaching world languages and cultures.

## Classics

The **Classics** faculty at Marquette offers two majors: Classical Languages and Classical Studies. In the **Classical Languages** major, students learn to read, translate, and interpret Latin and Ancient Greek texts through a close reading of the principal authors. Our graduates are well-rounded Classicists, who also possess a keen appreciation of the English language and its Classical roots. They are well prepared for graduate and professional work in such fields as Classics, Theology, Philosophy, Law, Journalism, Public Service and Education. The major consists of 30 Credit hours, including LATN 2001 Intermediate Latin 1 and LATN 2002 Intermediate Latin 2 and GREK 1001 Elementary Greek 1 and GREK 1002 Elementary Greek 2. Marquette also offers a Classical Languages program for Education Majors (with some additional requirements) and a Minor in Classical Languages (20 credits).

The **Classical Studies** major appeals to the diverse interests of 21st-century students. It focuses on the wisdom of the Classical World and its influence on modern civilization. Students in this program combine two years of Latin OR Greek with courses in various disciplines, most of which they may elect to suit their special interests. This is an ideal 'second' major for persons bound for graduate school or the professions, who desire a strong foundation in the liberal arts. The major consists of 36 credit hours, including LATN 2001 Intermediate Latin 1 and LATN 2002 Intermediate Latin 2 or GREK 2001 Intermediate Greek 1 and GREK 2002 Intermediate Greek 2, and 21 elective credit hours in ancient languages, civilization or tradition.

### Major in Classical Languages

The major in Classical Languages consists often courses with a minimum of 30 credit hours, including 20 credit hours of required courses and the completion of Concentration 1 (10 credit hours) or Concentration 2 (10 credit hours).

College of Education students must complete Concentration 2 and the additional requirements associated with teaching certification as listed below, including 4 credit hours for FOLA 4000 Teaching World Languages and Cultures.

Required courses:

|           |                                       |   |
|-----------|---------------------------------------|---|
| LATN 2001 | Intermediate Latin 1                  | 3 |
| LATN 2002 | Intermediate Latin 2                  | 3 |
| LATN 3500 | Survey of Republican Latin Literature | 3 |
| LATN 3505 | Survey of Later Latin Literature      | 3 |
| GREK 1001 | Elementary Greek 1                    | 4 |
| GREK 1002 | Elementary Greek 2                    | 4 |

Additional Requirements:

|  |    |
|--|----|
| Completion of Concentration 1 or 2 as listed below | 10 |
| Total Credit Hours                                 | 30 |

**Students must complete Concentration 1 or Concentration 2.**



## Concentration 1: Classical Languages

Ten additional credit hours (3-4 courses) in Latin (LATN) or Greek (GREK) courses.

A maximum of one course may be taken in courses listed under Classics (CLAS).

## Concentration 2: Classical Languages for Education Majors

Ten additional credit hours (3-4 courses) in Latin (LATN) courses

### Additional Requirements for Concentration 2: Classical Languages for Education Majors

1. Maintenance of a minimum 2.750 grade point average in Latin (LATN) courses.
2. Passing a competence examination in Latin before being permitted to register for FOLA 4000 Teaching World Languages and Cultures.
3. Completion of FOLA 4000 Teaching World Languages and Cultures.

## Minor in Classical Languages

The minor in Classical Languages consists of 6 courses with a minimum of 20 credit hours as listed below:

Required Courses:

|                    |                                       |    |
|--------------------|---------------------------------------|----|
| GREK 1001          | Elementary Greek 1                    | 4  |
| GREK 1002          | Elementary Greek 2                    | 4  |
| LATN 2001          | Intermediate Latin 1                  | 3  |
| LATN 2002          | Intermediate Latin 2                  | 3  |
| LATN 3500          | Survey of Republican Latin Literature | 3  |
| LATN 3505          | Survey of Later Latin Literature      | 3  |
| Total Credit Hours |                                       | 20 |

## Major in Classical Studies

The major in Classical Studies consists of 12 courses: 15 required credit hours and 21 elective credit hours for a minimum of 36 credit hours as listed below:

Required Courses:

|  |  |   |
|--|--|---|
| Choose Greek or Latin language sequence: |  | 6 |
| GREK 2001<br>& GREK 2002                 | Intermediate Greek 1<br>and Intermediate Greek 2 |   |
| LATN 2001<br>& LATN 2002                 | Intermediate Latin 1<br>and Intermediate Latin 2 |   |

## History Courses:

|           |                          |   |
|-----------|--------------------------|---|
| HIST 1201 | History of Western Art 1 | 3 |
| HIST 3201 | Ancient Greece and Rome  | 3 |

## Philosophy Course:

|           |                    |   |
|-----------|--------------------|---|
| PHIL 3610 | Ancient Philosophy | 3 |
|-----------|--------------------|---|

|  |    |
|--|----|
| Electives: Choose seven courses in Ancient Languages, Civilization or Tradition. | 21 |
|--|----|

Depending on course content, electives may be fulfilled with such courses as:

|           |  |
|-----------|--|
| POSC 2801 | Justice and Power                                  |
| POSC 4801 | Citizens, Beasts, or Gods?                         |
| THEO 2100 | New Testament Overview                             |
| THEO 4000 | Digging the Bible: Archeology and Biblical Studies |
| THAR 4200 | History of Theatre                                 |
| CMST 3340 | Classical Rhetorical Theory                        |

|                    |    |
|--------------------|----|
| Total Credit Hours | 36 |
|--------------------|----|

## Minor in Classical Studies

The minor in Classical Studies consists of 8 courses: 15 required credit hours and 9 elective credit hours for a minimum of 24 credit hours as listed below:

## Required Courses:

|  |  |
|--|--|
| Choose Greek or Latin language sequence: | 6  |
| GREK 2001<br>& GREK 2002                 | Intermediate Greek 1<br>and Intermediate Greek 2 |

|                          |  |
|--------------------------|--|
| LATN 2001<br>& LATN 2002 | Intermediate Latin 1<br>and Intermediate Latin 2 |
|--------------------------|--|

## History Courses:

|           |                          |   |
|-----------|--------------------------|---|
| HIST 1201 | History of Western Art 1 | 3 |
| HIST 3201 | Ancient Greece and Rome  | 3 |

## Philosophy Course:

|           |                    |   |
|-----------|--------------------|---|
| PHIL 3610 | Ancient Philosophy | 3 |
|-----------|--------------------|---|

|   |   |
|---|---|
| Electives: Choose three courses in Ancient Languages, Civilization or Tradition | 9 |
|---|---|

Depending on course content, electives may be fulfilled with such courses as:

|           |                            |
|-----------|----------------------------|
| POSC 2801 | Justice and Power          |
| POSC 4801 | Citizens, Beasts, or Gods? |

|           |  |
|-----------|--|
| THEO 2100 | New Testament Overview                             |
| THEO 4000 | Digging the Bible: Archeology and Biblical Studies |
| THAR 4200 | History of Theatre                                 |
| CMST 3340 | Classical Rhetorical Theory                        |

---

Total Credit Hours

24

## French

**French** studies at Marquette University offer students valuable linguistic, cultural and professional experience. As a language that is widely spoken in Europe, Africa, North America, Asia and the Caribbean, French occupies an important place in global affairs. Through grammar and style courses designed to hone linguistic skills, courses that focus on literature, the arts, philosophy, business and history, classes featuring computer-mediated exchanges with native Francophones and study abroad immersion opportunities, students will explore the great diversity of the Francophone world and the role that they may one day play within it. Whether it is completed as a single specialization or is meant to enhance another field of study such as education, political science, law, medicine or international business, a major in French can be attained upon completion of 30 credit hours above the Intermediate level language courses. Possible concentrations include “Francophone Literatures, Cultures and Language,” “Business and Culture” and “Francophone Literatures, Cultures and Language for Education.” Students may alternately elect to complete a minor in French.

## Major in French

The major in French consists often courses with a minimum of 30 credit hours, (excluding elementary and intermediate level French language courses) including 15 credit hours of required courses, one culture course (3 credit hours) and the completion of 12 credit hours in one of the three concentrations listed below.

### Notes:

- Elementary and intermediate level FREN courses (FREN 1001, FREN 1002, FREN 2001, FREN 2002 and FREN 2003) do not fulfill requirements toward the major.
- A maximum of one course may be taken in English: FREN 3210 French and Francophone Literature in English Translation:

### Required:

|  |   |   |
|--|---|---|
| FREN 3001                              | Writing Skills in French                        | 3 |
| FREN 3002                              | Conversational Skills in French                 | 3 |
| FREN 3100                              | Advanced Composition and Conversation in French | 3 |
| FREN 3500                              | Introduction to Textual Analysis in French      | 3 |
| FREN 4110                              | Advanced Grammar and Syntax in French           | 3 |
| Culture - Choose one of the following: |   | 3 |
| FREN 3300                              | French Civilization                             |   |
| FREN 3310                              | Francophone Civilizations and Cultures          |   |

|                    |  |    |
|--------------------|--|----|
| FREN 3320          | Contemporary Issues in the Francophone World |    |
| FREN 3610          | Contemporary French Canada                   |    |
| Total Credit Hours |  | 18 |

**Additional Requirements for the major in French:**

Students must complete four additional courses(12 credit hours) in one of the three concentrations described below:

**Concentration 1: Francophone Literatures, Cultures and Language**

Literature - Choose one of the following: 3

|           |  |
|-----------|--|
| FREN 3600 | French and Francophone Film or Theatre               |
| FREN 3610 | Contemporary French Canada                           |
| FREN 4500 | The Middle Ages in France: 1050-1450                 |
| FREN 4510 | Sixteenth Century French Literature                  |
| FREN 4520 | Seventeenth Century French Literature                |
| FREN 4530 | Eighteenth Century French Literature                 |
| FREN 4540 | Nineteenth Century French Literature                 |
| FREN 4550 | Twentieth and Twenty-First Century French Literature |

Culture - Choose one additional course from the following: 3

|           |  |
|-----------|--|
| FREN 3300 | French Civilization                          |
| FREN 3310 | Francophone Civilizations and Cultures       |
| FREN 3320 | Contemporary Issues in the Francophone World |
| FREN 3610 | Contemporary French Canada                   |

Electives - Choose two additional FREN courses. 6

Total Credit Hours 12

**Concentration 2: Business and Culture**

Required:

|  |  |   |
|--|--|---|
| FREN 3700  | French for the Professions             | 3 |
| FREN 3705  | Advanced French for the Professions    | 3 |
| Culture - Choose one additional course from the following: |  | 3 |
| FREN 3300  | French Civilization                    |   |
| FREN 3310  | Francophone Civilizations and Cultures |   |

|   |  |    |
|---|--|----|
| FREN 3320                                     | Contemporary Issues in the Francophone World |    |
| FREN 3610                                     | Contemporary French Canada                   |    |
| Elective - Choose one additional FREN course. |  | 3  |
| Total Credit Hours                            |  | 12 |

### Concentration 3: Francophone Literatures, Cultures and Language for Education Majors

Required:

|  |  |    |
|--|--|----|
| FREN 3120  | French Phonetics                                     | 3  |
| Literature - Choose one of the following:                  |  | 3  |
| FREN 3600  | French and Francophone Film or Theatre               |    |
| FREN 3610  | Contemporary French Canada                           |    |
| FREN 4500  | The Middle Ages in France: 1050-1450                 |    |
| FREN 4510  | Sixteenth Century French Literature                  |    |
| FREN 4520  | Seventeenth Century French Literature                |    |
| FREN 4530  | Eighteenth Century French Literature                 |    |
| FREN 4540  | Nineteenth Century French Literature                 |    |
| FREN 4550  | Twentieth and Twenty-First Century French Literature |    |
| Culture - Choose one additional course from the following: |  | 3  |
| FREN 3300  | French Civilization                                  |    |
| FREN 3310  | Francophone Civilizations and Cultures               |    |
| FREN 3320  | Contemporary Issues in the Francophone World         |    |
| FREN 3610  | Contemporary French Canada                           |    |
| Elective - Choose one additional FREN course.              |  | 3  |
| Total Credit Hours   |  | 12 |

#### Additional requirements for Concentration 3: Francophone Literatures, Cultures and Language for Education Majors:

1. Passing an official Oral Proficiency Interview (OPI) in French at the level of Intermediate-High on the ACTFL Oral Proficiency Scale before being permitted to register for FOLA 4000 Teaching World Languages and Cultures.
2. Completion of FOLA 4000 Teaching World Languages and Cultures.

3. Maintenance of a minimum 2.750 grade point average in the French major with a minimum of a 3.000 grade point average in courses FREN 3001 Writing Skills in French, FREN 3002 Conversational Skills in French, FREN 3100 Advanced Composition and Conversation in French, FREN 3120 French Phonetics, and FREN 4110 Advanced Grammar and Syntax in French, as applicable.
4. Residence in a country in which French is spoken or participation in a structured study abroad program and/or intensive immersion experience. The Department of Foreign Languages and Literatures must approve the program selected.

## Minor in French

The minor in French consists of six courses with a minimum of 18 credit hours: three required courses (9 credit hours), one culture course (3 credit hours), and two French electives (6 credit hours) as listed below.

### Notes:

- Elementary and intermediate level FREN courses (FREN 1001, FREN 1002, FREN 2001, FREN 2002 and FREN 2003) do not fulfill requirements toward the minor.
- FREN 3200 Contributions of the French and Francophone World and FREN 3210 French and Francophone Literature in English Translation: do not fulfill the six credit hours of FREN electives required for the French minor.

|  |  |    |
|--|--|----|
| Required:                              |  |    |
| FREN 3001                              | Writing Skills in French                     | 3  |
| FREN 3002                              | Conversational Skills in French              | 3  |
| FREN 3500                              | Introduction to Textual Analysis in French   | 3  |
| Culture - Choose one of the following: |  | 3  |
| FREN 3300                              | French Civilization                          |    |
| FREN 3310                              | Francophone Civilizations and Cultures       |    |
| FREN 3320                              | Contemporary Issues in the Francophone World |    |
| FREN 3610                              | Contemporary French Canada                   |    |
| Electives - Choose two FREN course.    |  | 6  |
| Total Credit Hours                     |  | 18 |

## German

Studying **German** at Marquette develops your ability to speak, read, understand and write in German, immersing yourself in the dramatic story of German literature and history, culture and contemporary German society. Recent courses have explored the topic of witness and resistance in German literature, the works of Franz Kafka, and the revolutionary aspects of art and music in the Romantic era. As a second major, German offers a unique way of enlarging pre-professional or scientific studies, especially for those who plan careers in law, medicine, business, government and education.

In addition to offering the German major, the faculty also support students preparing for secondary teaching, as well as a popular minor in German which consists of eighteen credit hours above the intermediate language level.

## Major in German

The major in German consists of ten courses with a minimum of 30 credit hours: five required courses (15 credit hours) and an additional five courses (15 credit hours) in Concentration 1 or Concentration 2 listed below. One course (GRMN 3210) in English may be counted toward the major.

### Note:

- Elementary and intermediate level GRMN courses (GRMN 1001, GRMN 1002, GRMN 2001, GRMN 2002 and GRMN 2003) do not count toward the major.

### Required:

|   |  |    |
|---|--|----|
| GRMN 3001                                       | German Composition and Conversation          | 3  |
| GRMN 3030                                       | Intensive Critical Reading in German         | 3  |
| GRMN 3100                                       | Advanced German Composition and Conversation | 3  |
| GRMN 3500                                       | The Modern German Short Story                | 3  |
| GRMN 3510                                       | Thematic Surveys in German Literature:       | 3  |
| Additional Requirements:                        |  | 15 |
| Completion of Concentration 1 or 2 listed below |  |    |
| Total Credit Hours                              |  | 30 |

**Students must complete five additional German courses in Concentration 1 or Concentration 2 as listed below:**

## Concentration 1: German Language, Literature and Culture

Electives - Choose five additional GRMN courses. 15

Both of the following courses in English may be counted toward the major:

|           |  |
|-----------|--|
| GRMN 3200 | German Contributions to Western Civilization |
|-----------|--|



GRMN 3210

German Literature in English Translation:

Total Credit Hours

15

## Concentration 2: Education Majors

### Note:

- GRMN 3210 does not fulfill the elective requirement for Concentration 2: Education majors.

### Required Courses:

|   |   |    |
|---|---|----|
| GRMN 3120                                       | German Phonetics and Advanced Speaking Practice | 3  |
| GRMN 3200                                       | German Contributions to Western Civilization    | 3  |
| GRMN 4110                                       | Advanced German Grammar                         | 3  |
| Electives - Choose two additional GRMN courses. |   | 6  |
| Total Credit Hours                              |   | 15 |

### Additional requirements for Concentration 2: Education Majors:

1. The German section will offer Education Majors an on-going evaluation of the candidates' abilities to understand and produce German, to read and write the language and to understand the structure of the language. Additionally, an evaluation is made of the candidate's familiarity with current German culture.
2. Maintenance of a minimum 2.750 grade point average in the German major with a minimum of a 3.000 grade point average in the following courses as applicable: GRMN 3001 German Composition and Conversation, GRMN 3100 Advanced German Composition and Conversation, GRMN 3120 German Phonetics and Advanced Speaking Practice and GRMN 4110 Advanced German Grammar.
3. Passing an official Oral Proficiency Interview (OPI) in German at the level of Intermediate-High on the ACTFL Oral Proficiency Scale before being permitted to register for FOLA 4000 Teaching World Languages and Cultures.
4. Completion of FOLA 4000 Teaching World Languages and Cultures.
5. Residence in a country in which German is spoken or participation in a structured study abroad program and/or intensive immersion experience. The Department of Foreign Languages and Literatures must approve the program selected.

## Minor in German

The minor in German consists of six courses: three required courses (9 credit hours) and three electives (9 credit hours) for a minimum of 18 semester hours as listed below.

### Note:

- Lower level GRMN courses do not count toward the minor: GRMN 1001, GRMN 1002, GRMN 2001, GRMN 2002 and GRMN 2003.

|  |  |    |
|--|--|----|
| Required:  |  |    |
| GRMN 3001  | German Composition and Conversation          | 3  |
| GRMN 3030  | Intensive Critical Reading in German         | 3  |
| GRMN 3500  | The Modern German Short Story                | 3  |
| Electives: Choose three GRMN courses.                                    |  | 9  |
| One of the following courses in English may be counted toward the minor: |  |    |
| GRMN 3200  | German Contributions to Western Civilization |    |
| GRMN 3210  | German Literature in English Translation:    |    |
| Total Credit Hours   |  | 18 |

## Spanish

The **Spanish** program at Marquette provides students with the opportunity to develop linguistic proficiency in one of the most widely spoken languages in the world while learning about the rich and diverse cultures of Latin America, Spain and the Latino communities in the United States. The goal of the undergraduate program is twofold: to master all four skills of language acquisition (speaking, understanding, reading and writing), and to gain in-depth knowledge of content areas related to Hispanic language, linguistics, literature, culture and film. Majors in Spanish may combine studies with other disciplines in the humanities, social sciences or sciences. Students considering careers in education, international business, medicine, law, government or communications are particularly encouraged to pursue a double major or a minor in Spanish. Two distinct majors are offered: **Spanish Language, Literature, and Culture**, with special concentrations including one for Education majors; and **Spanish for the Professions**, with concentrations in either Business or Health. Both majors also offer curricular concentrations designed to meet the needs of heritage and native speakers of Spanish.

Minors may also choose to concentrate on **Spanish Language, Literature, and Culture** or **Spanish for the Professions**. The minor requires six courses with a minimum of 18 credit hours, excluding the elementary and intermediate language courses.

### Notes:

- *Heritage learners of Spanish* are students of Hispanic background who have been educated in the United States and have been exposed to Spanish in their homes or communities from an early age, but who consider English their primary language.
- *Native speakers of Spanish* have been primarily educated in Spanish and consider Spanish their first language.

## Major in Spanish Language, Literature and Culture

The major in Spanish Language, Literature and Culture consists of seven courses with a minimum of 30 credit hours, excluding courses the elementary and intermediate level language courses (SPAN 1001, SPAN 1002, SPAN 1003, SPAN 2001, SPAN 2002, SPAN 2003). Students must complete one of the four concentrations listed below.

### Concentration 1: Spanish Language, Literature and Culture

Required Courses:

|                           |  |   |
|---------------------------|--|---|
| SPAN 3001                 | Grammar Review and Writing   | 3 |
| SPAN 3002                 | Spoken Spanish   | 3 |
| SPAN 3300<br>or SPAN 3310 | Peoples and Cultures of Spain<br>Peoples and Cultures of Spanish America | 3 |
| SPAN 3500                 | Introduction to Literary Analysis in Spanish                             | 3 |
| SPAN 3515                 | Masterpieces of Early Spanish Literature                                 | 3 |
| SPAN 3520                 | Masterpieces of Modern Spanish Literature                                | 3 |

|  |   |
|--|---|
| Literature - Choose one course in Spanish-American literature: | 3   |
| SPAN 4600  | Spanish-American Literature: Pre-Columbian to Baroque             |
| SPAN 4610  | Spanish-American Literature: Eighteenth and Nineteenth Centuries  |
| SPAN 4615  | Spanish-American Literature: Modernismo and Vanguardismo          |
| SPAN 4620  | Spanish-American Literature: The Boom to the Twenty-First Century |
| Electives: Choose three Spanish courses.                       | 9   |
| Total Credit Hours   | 30  |

## Concentration 2: Spanish Language, Literature and Culture for Heritage Speakers

### Notes:

- The following SPAN courses do not count toward the major in **Concentration 2: Spanish Language, Literature and Culture for Heritage Speakers**:

|           |  |   |
|-----------|--|---|
| SPAN 3001 | Grammar Review and Writing                   | 3 |
| SPAN 3002 | Spoken Spanish                               | 3 |
| SPAN 3500 | Introduction to Literary Analysis in Spanish | 3 |

- Education majors completing Concentration 2 must complete SPAN 4110 Advanced Spanish Grammar and Syntax and SPAN 4120 Spanish Phonetics and Applied Linguistics as two of the three elective courses, as well as the Additional Requirements for Concentration 4: Education Majors.

### Required Courses:

|  |   |   |
|--|---|---|
| SPAN 3005  | Spanish Grammar Review and Writing for Heritage Speakers                      | 3 |
| SPAN 3300  | Peoples and Cultures of Spain   | 3 |
| or SPAN 3310   | Peoples and Cultures of Spanish America                                       |   |
| SPAN 3505  | Introduction to Literary Analysis in Spanish for Heritage and Native Speakers | 3 |
| SPAN 3515  | Masterpieces of Early Spanish Literature                                      | 3 |
| SPAN 3520  | Masterpieces of Modern Spanish Literature                                     | 3 |
| SPAN 4400  | U.S. Latino/a Literature  | 3 |
| Literature - Choose one course in Spanish-American literature: |   | 3 |
| SPAN 4600  | Spanish-American Literature: Pre-Columbian to Baroque                         |   |
| SPAN 4610  | Spanish-American Literature: Eighteenth and Nineteenth Centuries              |   |

|  |   |    |
|--|---|----|
| SPAN 4615                                | Spanish-American Literature: Modernismo and Vanguardismo          |    |
| SPAN 4620                                | Spanish-American Literature: The Boom to the Twenty-First Century |    |
| Electives: Choose three Spanish courses. |   | 9  |
| Total Credit Hours                       |   | 30 |

### Concentration 3: Spanish Language, Literature and Culture for Native Speakers

**Note:**

- The following SPAN courses do not count toward the major in **Concentration 3: Spanish Language, Literature and Culture for Native Speakers**:

|           |  |   |
|-----------|--|---|
| SPAN 3001 | Grammar Review and Writing                         | 3 |
| SPAN 3002 | Spoken Spanish                                     | 3 |
| SPAN 3100 | Advanced Spanish Composition and Conversation      | 3 |
| SPAN 3500 | Introduction to Literary Analysis in Spanish       | 3 |
| SPAN 3515 | Masterpieces of Early Spanish Literature           | 3 |
| SPAN 3520 | Masterpieces of Modern Spanish Literature          | 3 |
| SPAN 3700 | Introduction to Business Spanish                   | 3 |
| SPAN 3710 | Introduction to Spanish for the Health Professions | 3 |

**Required Courses:**

|  |   |   |
|--|---|---|
| SPAN 3005  | Spanish Grammar Review and Writing for Heritage Speakers                      | 3 |
| or SPAN 4110   | Advanced Spanish Grammar and Syntax   |   |
| SPAN 3300  | Peoples and Cultures of Spain   | 3 |
| or SPAN 3310   | Peoples and Cultures of Spanish America                                       |   |
| SPAN 3505  | Introduction to Literary Analysis in Spanish for Heritage and Native Speakers | 3 |
| Literature - Choose two courses in Spanish literature: |   | 6 |
| SPAN 4500  | Race, Culture and Religion in Early Spanish Literature                        |   |
| SPAN 4505  | The Spanish Renaissance   |   |
| SPAN 4510  | Cervantes' Don Quijote  |   |
| SPAN 4525  | Spanish Literature: Eighteenth and Nineteenth Centuries                       |   |
| SPAN 4550  | Twentieth and Twenty-First Century Spanish Literature                         |   |

SPAN 4560 Contemporary Spanish Theater

Literature - Choose two courses in Spanish-American literature: 6

SPAN 4600 Spanish-American Literature: Pre-Columbian to Baroque

SPAN 4610 Spanish-American Literature: Eighteenth and Nineteenth Centuries

SPAN 4615 Spanish-American Literature: Modernismo and Vanguardismo

SPAN 4620 Spanish-American Literature: The Boom to the Twenty-First Century

SPAN 4640 Novels and Novelists in Spanish-America

SPAN 4660 Spanish-American Theatre

SPAN 4670 Spanish-American Short Story

Electives - Choose three courses in Spanish electives. 9

Total Credit Hours 30

## Concentration 4: Spanish Language, Literature and Culture for Education Majors

### Note:

- Education majors must complete the following as two of their courses, as well as the **Additional Requirements for Concentration 4: Education Majors**: SPAN 4110 Advanced Spanish Grammar and Syntax and SPAN 4120 Spanish Phonetics and Applied Linguistics.

### Required Courses:

SPAN 3001 Grammar Review and Writing 3

SPAN 3002 Spoken Spanish 3

SPAN 3300 Peoples and Cultures of Spain 3

or SPAN 3310 Peoples and Cultures of Spanish America

SPAN 3500 Introduction to Literary Analysis in Spanish 3

SPAN 3515 Masterpieces of Early Spanish Literature 3

SPAN 3520 Masterpieces of Modern Spanish Literature 3

SPAN 4110 Advanced Spanish Grammar and Syntax 3

SPAN 4120 Spanish Phonetics and Applied Linguistics 3

Literature - Choose one course in Spanish American literature: 3

SPAN 4600 Spanish-American Literature: Pre-Columbian to Baroque

SPAN 4610 Spanish-American Literature: Eighteenth and Nineteenth Centuries

|  |   |    |
|--|---|----|
| SPAN 4615                                      | Spanish-American Literature: Modernismo and Vanguardismo          |    |
| SPAN 4620                                      | Spanish-American Literature: The Boom to the Twenty-First Century |    |
| Elective - Choose one Spanish elective course. |   | 3  |
| Total Credit Hours                             |   | 30 |

#### **Additional Requirements for Concentration 4: Spanish Language, Literature and Culture for Education Majors:**

1. Maintenance of a minimum 2.750 grade point average in the foreign language major with a minimum of a 3.000 grade point average in the following courses: SPAN 3001 Grammar Review and Writing, SPAN 3002 Spoken Spanish, SPAN 3005 Spanish Grammar Review and Writing for Heritage Speakers, SPAN 3100 Advanced Spanish Composition and Conversation, SPAN 4110 Advanced Spanish Grammar and Syntax and SPAN 4120 Spanish Phonetics and Applied Linguistics, as applicable.
2. Passing an official Oral Proficiency Interview (OPI) in Spanish at the level of Intermediate-High on the ACTFL Oral Proficiency Scale before being permitted to register for FOLA 4000 Teaching World Languages and Cultures.
3. Completion of FOLA 4000 Teaching World Languages and Cultures.
4. Residence in a country in which Spanish is spoken or participation in a structured study abroad program and/or intensive immersion experience. The Department of Foreign Languages and Literatures must approve the program selected.

## **Minor in Spanish Language, Literature and Culture**

The minor in Spanish Language, Literature and Culture consists of six courses: three required courses (9 credit hours) and three electives (9 credit hours) for a minimum of 18 credit hours from one of the three concentrations listed below.

#### **Note:**

- The following elementary and intermediate level courses do not count toward the minor in any of the concentrations listed below: SPAN 1001, SPAN 1002, SPAN 1003, SPAN 2001, SPAN 2002 and SPAN 2003.

## **Concentration 1: Spanish Language, Literature and Culture**

#### **Required Courses:**

|                           |   |   |
|---------------------------|---|---|
| SPAN 3001                 | Grammar Review and Writing  | 3 |
| SPAN 3002                 | Spoken Spanish  | 3 |
| SPAN 3300<br>or SPAN 3310 | Peoples and Cultures of Spain<br>Peoples and Cultures of Spanish America              | 3 |
| SPAN 3500                 | Introduction to Literary Analysis in Spanish  | 3 |
| SPAN 3515<br>or SPAN 3520 | Masterpieces of Early Spanish Literature<br>Masterpieces of Modern Spanish Literature | 3 |

|                                       |   |
|---------------------------------------|---|
| Elective - Choose one Spanish course. | 3 |
|---------------------------------------|---|

|                    |    |
|--------------------|----|
| Total Credit Hours | 18 |
|--------------------|----|

## Concentration 2: Spanish Language, Literature and Culture for Heritage Speakers

### Note:

- The following courses do not count as electives for the minor in Concentration 2: Spanish Language, Literature and Culture for Heritage Speakers:

|           |  |   |
|-----------|--|---|
| SPAN 3001 | Grammar Review and Writing                   | 3 |
| SPAN 3002 | Spoken Spanish                               | 3 |
| SPAN 3500 | Introduction to Literary Analysis in Spanish | 3 |

### Required Courses:

|                                       |   |   |
|---------------------------------------|---|---|
| SPAN 3005                             | Spanish Grammar Review and Writing for Heritage Speakers                      | 3 |
| SPAN 3300                             | Peoples and Cultures of Spain   | 3 |
| or SPAN 3310                          | Peoples and Cultures of Spanish America                                       |   |
| SPAN 3505                             | Introduction to Literary Analysis in Spanish for Heritage and Native Speakers | 3 |
| SPAN 3515                             | Masterpieces of Early Spanish Literature                                      | 3 |
| or SPAN 3520                          | Masterpieces of Modern Spanish Literature                                     |   |
| SPAN 4400                             | U.S. Latino/a Literature  | 3 |
| Elective - Choose one Spanish course. |   | 3 |

|                    |    |
|--------------------|----|
| Total Credit Hours | 18 |
|--------------------|----|

## Concentration 3: Spanish Language, Literature and Culture for Native Speakers

### Note:

- The following courses do not count as electives for the minor in Concentration 3: Spanish Language, Literature and Culture for Native Speakers:

|           |   |   |
|-----------|---|---|
| SPAN 3001 | Grammar Review and Writing                    | 3 |
| SPAN 3002 | Spoken Spanish                                | 3 |
| SPAN 3100 | Advanced Spanish Composition and Conversation | 3 |
| SPAN 3500 | Introduction to Literary Analysis in Spanish  | 3 |



|           |  |   |
|-----------|--|---|
| SPAN 3515 | Masterpieces of Early Spanish Literature           | 3 |
| SPAN 3520 | Masterpieces of Modern Spanish Literature          | 3 |
| SPAN 3700 | Introduction to Business Spanish                   | 3 |
| SPAN 3710 | Introduction to Spanish for the Health Professions | 3 |

## Required Courses:

|              |   |   |
|--------------|---|---|
| SPAN 3005    | Spanish Grammar Review and Writing for Heritage Speakers                      | 3 |
| or SPAN 4110 | Advanced Spanish Grammar and Syntax   |   |
| SPAN 3505    | Introduction to Literary Analysis in Spanish for Heritage and Native Speakers | 3 |
| SPAN 3300    | Peoples and Cultures of Spain   | 3 |
| or SPAN 3310 | Peoples and Cultures of Spanish America                                       |   |

Literature - Choose one course in Spanish literature: 3

|           |   |  |
|-----------|---|--|
| SPAN 4500 | Race, Culture and Religion in Early Spanish Literature  |  |
| SPAN 4505 | The Spanish Renaissance                                 |  |
| SPAN 4510 | Cervantes' Don Quijote                                  |  |
| SPAN 4525 | Spanish Literature: Eighteenth and Nineteenth Centuries |  |
| SPAN 4550 | Twentieth and Twenty-First Century Spanish Literature   |  |
| SPAN 4560 | Contemporary Spanish Theater                            |  |

Literature - Choose one course in Spanish-American literature: 3

|           |   |  |
|-----------|---|--|
| SPAN 4600 | Spanish-American Literature: Pre-Columbian to Baroque             |  |
| SPAN 4610 | Spanish-American Literature: Eighteenth and Nineteenth Centuries  |  |
| SPAN 4615 | Spanish-American Literature: Modernismo and Vanguardismo          |  |
| SPAN 4620 | Spanish-American Literature: The Boom to the Twenty-First Century |  |
| SPAN 4640 | Novels and Novelists in Spanish-America                           |  |
| SPAN 4660 | Spanish-American Theatre  |  |
| SPAN 4670 | Spanish-American Short Story                                      |  |

Elective - Choose one Spanish elective course. 3

Total Credit Hours 18

## Major in Spanish for the Professions

The major in Spanish for the Professions consists of ten courses with a minimum of 30 credit hours completing one of the four concentrations listed below.

**Note:**

- The following elementary and intermediate level Spanish courses do not count toward fulfilling credit hours in the major in Spanish for the Professions: SPAN 1001, SPAN 1002, SPAN 1003, SPAN 2001, SPAN 2002 and SPAN 2003.

### Concentration 1: Spanish for the Business Professions

Required Courses:

|   |   |    |
|---|---|----|
| SPAN 3001                               | Grammar Review and Writing                    | 3  |
| SPAN 3002                               | Spoken Spanish                                | 3  |
| SPAN 3100                               | Advanced Spanish Composition and Conversation | 3  |
| SPAN 3300                               | Peoples and Cultures of Spain                 | 3  |
| or SPAN 3310                            | Peoples and Cultures of Spanish America       |    |
| SPAN 3500                               | Introduction to Literary Analysis in Spanish  | 3  |
| SPAN 3700                               | Introduction to Business Spanish              | 3  |
| SPAN 3705                               | Advanced Spanish for Business                 | 3  |
| SPAN 4320                               | Contemporary Issues in the Hispanic World     | 3  |
| Electives - Choose two Spanish courses. |   | 6  |
| Total Credit Hours                      |   | 30 |

### Concentration 2: Spanish for the Health Professions

Required Courses:

|              |  |   |
|--------------|--|---|
| SPAN 3001    | Grammar Review and Writing                         | 3 |
| SPAN 3002    | Spoken Spanish                                     | 3 |
| SPAN 3100    | Advanced Spanish Composition and Conversation      | 3 |
| SPAN 3300    | Peoples and Cultures of Spain                      | 3 |
| or SPAN 3310 | Peoples and Cultures of Spanish America            |   |
| SPAN 3500    | Introduction to Literary Analysis in Spanish       | 3 |
| SPAN 3710    | Introduction to Spanish for the Health Professions | 3 |
| SPAN 3715    | Advanced Spanish for the Health Professions        | 3 |
| SPAN 4320    | Contemporary Issues in the Hispanic World          | 3 |

|   |    |
|---|----|
| Electives - Choose two Spanish courses. | 6  |
| Total Credit Hours                      | 30 |

### Concentration 3: Spanish for the Professions for Heritage Speakers

**Note:**

- The following SPAN courses do not count as elective courses for the Concentration 3: Spanish for the Professions for Heritage Speakers: SPAN 3001 Grammar Review and Writing, SPAN 3002 Spoken Spanish and SPAN 3500 Introduction to Literary Analysis in Spanish.

Required Courses:

|  |   |    |
|--|---|----|
| SPAN 3005  | Spanish Grammar Review and Writing for Heritage Speakers  | 3  |
| SPAN 3100  | Advanced Spanish Composition and Conversation   | 3  |
| or SPAN 4110   | Advanced Spanish Grammar and Syntax   |    |
| SPAN 3300  | Peoples and Cultures of Spain   | 3  |
| or SPAN 3310   | Peoples and Cultures of Spanish America   |    |
| SPAN 3505  | Introduction to Literary Analysis in Spanish for Heritage and Native Speakers                         | 3  |
| SPAN 4320  | Contemporary Issues in the Hispanic World   | 3  |
| Choose either Business or Health Professions sequence: |   | 6  |
| SPAN 3700<br>& SPAN 3705                               | Introduction to Business Spanish<br>and Advanced Spanish for Business                                 |    |
| SPAN 3710<br>& SPAN 3715                               | Introduction to Spanish for the Health Professions<br>and Advanced Spanish for the Health Professions |    |
| Electives - Choose three Spanish electives.            |   | 9  |
| Total Credit Hours                                     |   | 30 |

### Concentration 4: Spanish for the Professions for Native Speakers of Spanish

**Note:**

- The following SPAN courses do not count as elective courses for the Concentration 4: Spanish for the Professions for Native Speakers of Spanish:

|           |   |   |
|-----------|---|---|
| SPAN 3001 | Grammar Review and Writing                    | 3 |
| SPAN 3002 | Spoken Spanish                                | 3 |
| SPAN 3100 | Advanced Spanish Composition and Conversation | 3 |
| SPAN 3500 | Introduction to Literary Analysis in Spanish  | 3 |
| SPAN 3515 | Masterpieces of Early Spanish Literature      | 3 |

|           |  |   |
|-----------|--|---|
| SPAN 3520 | Masterpieces of Modern Spanish Literature          | 3 |
| SPAN 3700 | Introduction to Business Spanish                   | 3 |
| SPAN 3710 | Introduction to Spanish for the Health Professions | 3 |

## Required Courses:

|  |   |    |
|--|---|----|
| SPAN 3005                                | Spanish Grammar Review and Writing for Heritage Speakers                      | 3  |
| or SPAN 4110                             | Advanced Spanish Grammar and Syntax   |    |
| SPAN 3300                                | Peoples and Cultures of Spain   | 3  |
| or SPAN 3310                             | Peoples and Cultures of Spanish America                                       |    |
| SPAN 3505                                | Introduction to Literary Analysis in Spanish for Heritage and Native Speakers | 3  |
| SPAN 3705                                | Advanced Spanish for Business   | 3  |
| or SPAN 3715                             | Advanced Spanish for the Health Professions                                   |    |
| SPAN 4320                                | Contemporary Issues in the Hispanic World                                     | 3  |
| Electives - Choose five Spanish courses. |   | 15 |
| Total Credit Hours                       |   | 30 |

## Minor in Spanish for the Professions

The minor in Spanish for the Professions consists of six courses with a minimum of 18 credit hours in one of the four concentrations listed below.

**Note:**

- The following elementary and intermediate level courses do not count toward the minor in Spanish for the Professions: SPAN 1001, SPAN 1002, SPAN 1003, SPAN 2001, SPAN 2002 and SPAN 2003.

### Concentration 1: Spanish for the Business Professions

## Required Courses:

|              |  |   |
|--------------|--|---|
| SPAN 3001    | Grammar Review and Writing                   | 3 |
| SPAN 3002    | Spoken Spanish                               | 3 |
| SPAN 3300    | Peoples and Cultures of Spain                | 3 |
| or SPAN 3310 | Peoples and Cultures of Spanish America      |   |
| SPAN 3500    | Introduction to Literary Analysis in Spanish | 3 |
| SPAN 3700    | Introduction to Business Spanish             | 3 |

|                    |                               |    |
|--------------------|-------------------------------|----|
| SPAN 3705          | Advanced Spanish for Business | 3  |
| Total Credit Hours |                               | 18 |

## Concentration 2: Spanish for the Health Professions

Required Courses:

|                    |  |    |
|--------------------|--|----|
| SPAN 3001          | Grammar Review and Writing                         | 3  |
| SPAN 3002          | Spoken Spanish                                     | 3  |
| SPAN 3300          | Peoples and Cultures of Spain                      | 3  |
| or SPAN 3310       | Peoples and Cultures of Spanish America            |    |
| SPAN 3500          | Introduction to Literary Analysis in Spanish       | 3  |
| SPAN 3710          | Introduction to Spanish for the Health Professions | 3  |
| SPAN 3715          | Advanced Spanish for the Health Professions        | 3  |
| Total Credit Hours |  | 18 |

## Concentration 3: Heritage Learners

Required Courses:

|   |   |    |
|---|---|----|
| SPAN 3005                               | Spanish Grammar Review and Writing for Heritage Speakers  | 3  |
| SPAN 3300                               | Peoples and Cultures of Spain   | 3  |
| or SPAN 3310                            | Peoples and Cultures of Spanish America   |    |
| SPAN 3505                               | Introduction to Literary Analysis in Spanish for Heritage and Native Speakers                         | 3  |
| SPAN 4320                               | Contemporary Issues in the Hispanic World   | 3  |
| Choose the Business or Health sequence: |   | 6  |
| SPAN 3700<br>& SPAN 3705                | Introduction to Business Spanish<br>and Advanced Spanish for Business                                 |    |
| SPAN 3710<br>& SPAN 3715                | Introduction to Spanish for the Health Professions<br>and Advanced Spanish for the Health Professions |    |
| Total Credit Hours                      |   | 18 |

## Concentration 4: Native Speakers of Spanish

**Note:**

- The following courses do not count toward the electives in Concentration 4: Native Speakers of Spanish:

|           |                            |   |
|-----------|----------------------------|---|
| SPAN 3001 | Grammar Review and Writing | 3 |
| SPAN 3002 | Spoken Spanish             | 3 |

|           |  |   |
|-----------|--|---|
| SPAN 3100 | Advanced Spanish Composition and Conversation      | 3 |
| SPAN 3500 | Introduction to Literary Analysis in Spanish       | 3 |
| SPAN 3515 | Masterpieces of Early Spanish Literature           | 3 |
| SPAN 3520 | Masterpieces of Modern Spanish Literature          | 3 |
| SPAN 3700 | Introduction to Business Spanish                   | 3 |
| SPAN 3710 | Introduction to Spanish for the Health Professions | 3 |

## Required Courses:

|  |   |    |
|--|---|----|
| SPAN 3005  | Spanish Grammar Review and Writing for Heritage Speakers                      | 3  |
| or SPAN 4110                                       | Advanced Spanish Grammar and Syntax   |    |
| SPAN 3300  | Peoples and Cultures of Spain   | 3  |
| or SPAN 3310                                       | Peoples and Cultures of Spanish America                                       |    |
| SPAN 3505  | Introduction to Literary Analysis in Spanish for Heritage and Native Speakers | 3  |
| SPAN 3705  | Advanced Spanish for Business   | 3  |
| or SPAN 3715                                       | Advanced Spanish for the Health Professions                                   |    |
| Electives - Choose two additional Spanish courses. |   | 6  |
| Total Credit Hours                                 |   | 18 |

## Other Language Courses Offered

### **Arabic, Chinese, Italian and Japanese:**

Elementary and intermediate level language courses are offered in Arabic, Chinese, Italian, and Japanese as well as courses taught in English about culture, civilization and literature.

### **FOLA Courses:**

Interdisciplinary courses within the department are listed under the FOLA subject heading. These courses cover such topics as women in foreign literature and the methodology for teaching world languages and cultures.

# History

**Chairperson: James A. Marten, Ph.D.**

Department of History website (<http://www.marquette.edu/history/>)

History illuminates every aspect of the human experience—politics, economics, religion, social issues, art and war—shaping our memory and equipping us to think critically and constructively about the present and our connections to the past. The history curriculum orders the study of the past in logical and meaningful ways. Beginning with surveys that offer general approaches to broad periods of history, students then move on to upper division classes that challenge students to read and write about specific subjects and places in more depth. They finish their degrees by reading deeply, conducting archival research and writing major papers on specialized topics in seminar-style readings and research courses. Students interested in further developing their understanding of history can write senior theses or undertake internships at museums, archives and other public history sites.

## Major in History

The major in history consists of 33 credit hours: two required courses (6 credit hours), Option 1 or Option 2 (6 credit hours) and seven courses (21 credit hours) of upper-division history courses from Group I - III as listed below.

Required Courses:

|                                       |   |    |
|---------------------------------------|---|----|
| HIST 1001                             | Growth of Western Civilization to 1715    | 3  |
| HIST 1002                             | Growth of Western Civilization since 1715 | 3  |
| Choose Option 1 or Option 2:          |   | 6  |
| Option 1:                             |   |    |
| HIST 1101                             | Introduction to American History          |    |
| Choose one of the following courses:  |   |    |
| HIST 1301                             | Survey of Latin America                   |    |
| HIST 1401                             | Africa                                    |    |
| HIST 1501                             | East Asia                                 |    |
| Option 2:                             |   |    |
| HIST 2101                             | Growth of the American Nation 1           |    |
| HIST 2102                             | Growth of the American Nation 2           |    |
| * Upper-division history: Group I-III |   | 21 |
| Total Credit Hours                    |   | 33 |

**\* Upper-division history courses: Seven courses (21 credit hours) with at least one course from each of the three groups listed below:**

- **Group I, United States:** Courses HIST 3101-3199, HIST 4103-4199



- **Group II**, Europe: Courses HIST 3201-3299, HIST 3751, HIST 4200-4299
- **Group III**, Asia, Africa and Latin America: Courses HIST 3300-3499, HIST 4300-4600

The 21 credit hours selected must also include one HIST 4953 course and one HIST 4955 Undergraduate Seminar in History course. HIST 4953 Readings in History and HIST 4955 Undergraduate Seminar in History may be used to satisfy the group distribution requirement based on course content.

**Notes:**

- Students may enroll in HIST 5000-level graduate courses (cross-listed for undergraduates at the HIST 4000-level) with permission of the instructor.
- At the discretion of the department, credit in history may be allowed in exceptional cases for courses taken in other departments of the university.

## Department of Public Instruction Certification - Major in History

College of Education students who plan to seek Wisconsin Department of Public Instruction certification in History must complete a total of 36 credit hours for the major in History: two required courses (6 credit hours), Option 1 or Option 2 (6 credit hours) and eight courses (24 credit hours) of upper-division history courses from Group I - III as listed below.

Required Courses:

|                              |   |   |
|------------------------------|---|---|
| HIST 1001                    | Growth of Western Civilization to 1715    | 3 |
| HIST 1002                    | Growth of Western Civilization since 1715 | 3 |
| Choose Option 1 or Option 2: |   | 6 |

Option 1:

|                                      |                                  |  |
|--------------------------------------|----------------------------------|--|
| HIST 1101                            | Introduction to American History |  |
| Choose one of the following courses: |                                  |  |
| HIST 1301                            | Survey of Latin America          |  |
| HIST 1401                            | Africa                           |  |
| HIST 1501                            | East Asia                        |  |

Option 2:

|           |                                 |  |
|-----------|---------------------------------|--|
| HIST 2101 | Growth of the American Nation 1 |  |
| HIST 2102 | Growth of the American Nation 2 |  |

|   |    |
|---|----|
| * Upper-division history: Group I - III | 24 |
| Total Credit Hours                      | 36 |

**\* Upper-division history courses: Eight courses (24 credit hours) divided as follows:**

- **Group I**, United States: Courses HIST 3101-3199, HIST 4103-4199: at least one course
- **Group II**, Europe: Courses HIST 3201-3299, HIST 3751, HIST 4200-4299: two courses (one ancient/medieval and one modern)

- **Group III**, Asia, Africa and Latin America: Courses HIST 3300-3499, HIST 4300-4600: at least one course

HIST 4953 Readings in History and HIST 4955 Undergraduate Seminar in History are also required as two of the upper-division elective courses.

**Note:**

- Based on course content, HIST 4953 Readings in History and HIST 4955 Undergraduate Seminar in History may be used to satisfy the group distribution requirement.

## Minor in History

The minor in history consists of 24 credit hours: two required courses (6 credit hours), Option 1 or Option 2 (6 credit hours) and four courses of upper-division history courses from Groups I - III (12 credit hours) as listed below.

Required Courses:

|                                       |   |    |
|---------------------------------------|---|----|
| HIST 1001                             | Growth of Western Civilization to 1715    | 3  |
| HIST 1002                             | Growth of Western Civilization since 1715 | 3  |
| Choose Option 1 or Option 2:          |   | 6  |
| Option 1:                             |   |    |
| HIST 1101                             | Introduction to American History          |    |
| and one of the following:             |   |    |
| HIST 1301                             | Survey of Latin America                   |    |
| HIST 1401                             | Africa                                    |    |
| HIST 1501                             | East Asia                                 |    |
| Option 2:                             |   |    |
| HIST 2101                             | Growth of the American Nation 1           |    |
| HIST 2102                             | Growth of the American Nation 2           |    |
| * Upper-division History: Group I-III |   | 12 |
| Total Credit Hours                    |   | 24 |

**\* Upper-division courses: Four courses (12 credit hours) with at least one course from each of the three groups listed below:**

- **Group I**, United States: Courses HIST 3101-3199, HIST 4103-4199
- **Group II**, Europe: Courses HIST 3201-3299, HIST 3751, HIST 4200-4299
- **Group III**, Asia, Africa and Latin America: Courses HIST 3300-3499, HIST 4300-4600

One of the upper-division courses must be either HIST 4953 Readings in History or HIST 4955 Undergraduate Seminar in History.

Based on course content, HIST 4953 Readings in History or HIST 4955 Undergraduate Seminar in History may be used to satisfy the group distribution requirement.

**Note:**

- Requirements for the Interdisciplinary Minor in Public History (p. 273) can be found in the Undergraduate Bulletin under Interdisciplinary Majors and Minors.

## Department of Public Instruction Certification

To pursue Department of Public Instruction certification, College of Education students are required to complete eight courses (24 credit hours): two required courses (6 credit hours), Option 1 or Option 2 (6 credit hours) and four upper-division history courses from Groups I - III (12 credit hours) as listed below.

Required Courses:

|   |   |    |
|---|---|----|
| HIST 1001   | Growth of Western Civilization to 1715    | 3  |
| HIST 1002   | Growth of Western Civilization since 1715 | 3  |
| Choose Option 1 or 2:                             |   | 6  |
| Option 1:   |   |    |
| HIST 1101   | Introduction to American History          |    |
| and one of the following:                         |   |    |
| HIST 1301   | Survey of Latin America                   |    |
| HIST 1401   | Africa                                    |    |
| HIST 1501   | East Asia                                 |    |
| Option 2:   |   |    |
| HIST 2101   | Growth of the American Nation 1           |    |
| HIST 2102   | Growth of the American Nation 2           |    |
| * Upper-division courses in History: Groups I-III |   | 12 |
| Total Credit Hours                                |   | 24 |

**\* Upper-division courses: Four courses (12 credit hours) with at least one course from each of the three groups listed below:**

- **Group I**, United States: Courses HIST 3101-3199, HIST 4103-4199
- **Group II**, Europe: Courses HIST 3201-3299, HIST 3751, HIST 4200-4299
- **Group III**, Asia, Africa and Latin America: Courses HIST 3300-3499, HIST 4300-4600

One of the upper-division courses must be either **HIST 4953 Readings in History** or **HIST 4955 Undergraduate Seminar in History**.

**Notes:**

- HIST 4931 Topics in History, HIST 4953 Readings in History, HIST 4955 Undergraduate Seminar in History and HIST 4995 Independent Study in History, courses whose content varies from term to term, will satisfy group distribution requirements according to their course title and content.

- At the discretion of the department, credit in history may be allowed in exceptional cases for courses taken in other departments of the university.

## Major in American Military History

The American Military History major consists of 32-36 credit hours as listed below.

### Required Courses:

|   |  |    |
|---|--|----|
| HIST 1001   | Growth of Western Civilization to 1715   | 3  |
| HIST 1002   | Growth of Western Civilization since 1715  | 3  |
| HIST 3118   | American Military History  | 3  |
| NASC 1161   | Evolution of the Art of War  | 3  |
| or NASC 1181  | Amphibious Warfare   |    |
| Choose one of the following 6-credit course combinations: |  | 6  |
| HIST 1101<br>& HIST 1301                                  | Introduction to American History<br>and Survey of Latin America  |    |
| HIST 1101<br>& HIST 1401                                  | Introduction to American History<br>and Africa   |    |
| HIST 1101<br>& HIST 1501                                  | Introduction to American History<br>and East Asia  |    |
| HIST 2101<br>& HIST 2102                                  | Growth of the American Nation 1<br>and Growth of the American Nation 2                                   |    |
| AFAS 2021<br>& AFAS 2022                                  | Evolution of the Air Force/Air and Space Power 1<br>and Evolution of the Air Force/Air and Space Power 2 |    |
| or NASC 1022  | Sea Power and Maritime Affairs   |    |
| Electives: Choose five of the following courses:          |  | 15 |
| HIST 3102   | Revolutionary America: 1707-1787   |    |
| HIST 3104   | The Civil War Era  |    |
| HIST 3127   | The Vietnam War Era  |    |
| HIST 3295   | The Great War": World War I, 1914-18   |    |
| HIST 3297   | World War II   |    |
| HIST 4113   | American Foreign Relations 1   |    |
| HIST 4114   | American Foreign Relations 2   |    |
| HIST 4298   | The Cold War   |    |

---

Total Credit Hours

33

**Notes:**

- HIST 4931 Topics in History, HIST 4953 Readings in History, HIST 4955 Undergraduate Seminar in History and HIST 4995 Independent Study in History may be used toward the upper-division HIST elective requirement, depending upon course content and approval of the department chair.
- A HIST major cannot be used as a second major with American Military History (AMMH).

## Interdisciplinary Majors and Minors

The Klingler College of Arts and Sciences is committed to the fundamental goal of integrating diverse areas of learning into a coherent whole. This integration lies at the heart of the liberal arts education provided at Marquette University. Achieving this goal involves two steps. First, as part of the college curriculum, students are required to study material from the wide variety of disciplines comprising the arts and sciences. Second, by majoring and perhaps minoring in a specific discipline of their choice, students pursue learning in more depth and are then challenged to integrate this into their broader understanding of the world acquired through the college curriculum. For students whose interests go beyond the boundaries of traditional disciplines, the college offers the following interdisciplinary majors and minors:

- Interdisciplinary Major/Minor in Africana Studies (p. 231)
- Interdisciplinary Major in Applied Mathematical Economics (p. 235)
- Broad Field Science (p. 237) (for students who are seeking education certification)
- Interdisciplinary Major/Minor in International Affairs (p. 241)
- Interdisciplinary Major/Minor in Women's and Gender Studies (p. 251)
- Interdisciplinary Minor in Asian Studies (p. 257)
- Interdisciplinary Minor in Broad Field Social Science (p. 259) (for students majoring in education)
- Interdisciplinary Minor in Catholic Studies (p. 261)
- Interdisciplinary Minor in Environmental Ethics (p. 262)
- Interdisciplinary Minor in Ethics (p. 264)
- Interdisciplinary Minor in Family Studies (p. 266)
- Interdisciplinary Minor in Justice and Peace (p. 268)
- Interdisciplinary Minor in Medieval Studies (p. 271)
- Interdisciplinary Minor in Public History (p. 273)
- Interdisciplinary Minor in Urban Affairs (p. 275)

### Individualized Interdisciplinary Major or Minor

Students for whom particular interests may be better served by a flexible grouping of courses from several areas can create an individualized interdisciplinary major or minor. Examples of self-designed majors or minors include Arabic Studies, Italian Studies and Peace Studies. Students should consult the college office in order to be referred to a faculty adviser in their area of interest. With this adviser, the student will write a proposal explaining the relationship between educational objectives and the choice of an interdisciplinary major or minor, a list of courses to be included and the sequence in which they will be taken. Such proposals, as well as any subsequent modifications, must be approved by the college's associate dean for academic affairs.

## Africana Studies

Students who pursue the major/minor in Africana Studies come from all racial, ethnic and cultural backgrounds. They are unified by a common desire to enlarge and enrich their intellectual horizons by learning about the artistic, economic, historical, literary, philosophical, political, economic, sociological, scientific and theological contributions of people of African descent to U.S. society and culture. Students take core courses in English, history, philosophy, sociology and theology and augment these with at least five electives to complete the major.

Students are encouraged to develop 5-course concentrations in areas of particular interest. Possibilities include a disciplinary focus such as literature or sociology or an area focus such as American urban studies. Concentrations should be designed with a major adviser and require approval by the director of the program.

## Africana Studies Major

The major consists of 30 credit hours: five core courses, including at least one course from each group (15 credit hours) and five electives (15 credit hours) from the course listings below.

### Core Courses:

|  |  |           |
|--|--|-----------|
| <b>Group A - English</b>   |  | <b>3</b>  |
| ENGL 4810  | Race, Ethnicity, and Identity in American Literature and Culture       |           |
| ENGL 4820  | Studies in Race and/or Ethnic Literature                               |           |
| ENGL 4830  | African-American Literature  |           |
| <b>Group B - History</b>   |  | <b>3</b>  |
| HIST 1401  | Africa   |           |
| HIST 4135  | African-American History   |           |
| <b>Group C - Sociology</b>   |  | <b>3</b>  |
| SOCI 3250  | Race and Ethnic Relations  |           |
| SOCI 4250  | African-American Social Thought  |           |
| <b>Group D - Theology</b>  |  | <b>3</b>  |
| THEO 4490  | Studies in Moral Theology (when topic is approved by program director) |           |
| <b>Additional Course - Choose one from one of the Groups listed above.</b> |  | <b>3</b>  |
| <b>Elective Courses - Choose five from the list below:</b>                 |  | <b>15</b> |
| ANTH 3100  | Urban Anthropology   |           |
| ARSC 3986  | Internship   |           |
| CEEN 3720  | Decent and Affordable Housing  |           |

|           |   |
|-----------|---|
| COMM 4500 | Race and Gender Issues in Mass Media                  |
| CMST 3410 | Intercultural Communication                           |
| CMST 4400 | Cross-Cultural Communication in the United States     |
| ECON 4012 | Urban and Regional Economics                          |
| ENGL 4840 | Post-Colonial Literature                              |
| FREN 3310 | Francophone Civilizations and Cultures                |
| HEAL 1025 | Culture and Health                                    |
| HIST 4140 | American Urban History                                |
| HIST 4350 | The Caribbean   |
| HIST 4450 | North Africa  |
| MANA 3035 | Diversity in Organizations                            |
| MUSI 2440 | History of Jazz                                       |
| PHAS 4117 | Cultural Diversity in Health Care                     |
| PHIL 3780 | Africana Philosophy                                   |
| POSC 4281 | Urban Public Policy                                   |
| POSC 4291 | Urban Politics  |
| POSC 4361 | Politics of Race, Ethnicity, and Gender               |
| PSYC 3210 | The Psychology of Prejudice                           |
| SOCI 3280 | Race and Family                                       |
| SOCI 3550 | Race, Gender and Medicine                             |
| SOCI 4100 | Urban Life  |
| SOCI 4270 | Urban Sociology                                       |
| SOCI 4400 | Social Inequality                                     |
| SOWJ 1001 | Introduction to Social Welfare and Justice            |
| SPAN 4320 | Contemporary Issues in the Hispanic World             |
| SPAN 4400 | U.S. Latino/a Literature                              |
| SPPA 4610 | Multicultural Issues for Speech-Language Pathologists |

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Total Credit Hours

30

**Notes:**

- Any of the core courses listed above which are not taken to fulfill the core course requirement may be taken as an elective.



- “Special Topics,” seminars or colloquia courses with an Africana Studies focus will also be considered for approval by the program director.

## Africana Studies Minor

The minor consists of 18 credit hours: three core courses (9 credit hours) and three elective courses (9 credit hours) from the listings below.

Core Courses - Choose three courses from the Groups listed below:

9

### Group A - English

|           |  |
|-----------|--|
| ENGL 4810 | Race, Ethnicity, and Identity in American Literature and Culture |
| ENGL 4820 | Studies in Race and/or Ethnic Literature                         |
| ENGL 4830 | African-American Literature                                      |

### Group B - History

|           |                          |
|-----------|--------------------------|
| HIST 1401 | Africa                   |
| HIST 4135 | African-American History |

### Group C - Sociology

|           |                                 |
|-----------|---------------------------------|
| SOCI 3250 | Race and Ethnic Relations       |
| SOCI 4250 | African-American Social Thought |

### Group D - Theology

|           |  |
|-----------|--|
| THEO 4490 | Studies in Moral Theology (when topic is approved by program director) |
|-----------|--|

Elective Courses - Choose three from the list below:

9

|           |   |
|-----------|---|
| ANTH 3100 | Urban Anthropology                                |
| ARSC 3986 | Internship  |
| CEEN 3720 | Decent and Affordable Housing                     |
| COMM 4500 | Race and Gender Issues in Mass Media              |
| CMST 3410 | Intercultural Communication                       |
| CMST 4400 | Cross-Cultural Communication in the United States |
| ECON 4012 | Urban and Regional Economics                      |
| ENGL 4840 | Post-Colonial Literature                          |
| FREN 3310 | Francophone Civilizations and Cultures            |
| HEAL 1025 | Culture and Health                                |
| HIST 4140 | American Urban History                            |
| HIST 4350 | The Caribbean                                     |

|                    |   |    |
|--------------------|---|----|
| HIST 4450          | North Africa  |    |
| MANA 3035          | Diversity in Organizations                            |    |
| MUSI 2440          | History of Jazz                                       |    |
| PHAS 4117          | Cultural Diversity in Health Care                     |    |
| PHIL 3780          | Africana Philosophy                                   |    |
| POSC 4281          | Urban Public Policy                                   |    |
| POSC 4291          | Urban Politics  |    |
| POSC 4361          | Politics of Race, Ethnicity, and Gender               |    |
| PSYC 3210          | The Psychology of Prejudice                           |    |
| SOCI 3280          | Race and Family                                       |    |
| SOCI 3550          | Race, Gender and Medicine                             |    |
| SOCI 4100          | Urban Life  |    |
| SOCI 4270          | Urban Sociology                                       |    |
| SOCI 4400          | Social Inequality                                     |    |
| SOWJ 1001          | Introduction to Social Welfare and Justice            |    |
| SPAN 4320          | Contemporary Issues in the Hispanic World             |    |
| SPAN 4400          | U.S. Latino/a Literature                              |    |
| SPPA 4610          | Multicultural Issues for Speech-Language Pathologists |    |
| Total Credit Hours |   | 18 |

**Notes:**

- Any of the core courses listed above which are not taken to fulfill the core course requirement may be taken as an elective.
- Special topics, seminars or colloquia courses with an Africana Studies focus will also be considered for approval by the program director.

# Applied Mathematical Economics

This interdisciplinary major blends mathematics and economics to provide the quantitative tools necessary for modern economic analysis. Economics students will find this major to be excellent training for employment as a business economist or excellent preparation for graduate study. The mathematics, engineering or science student who wants to use mathematical expertise to learn a business discipline will find this major to be an interesting and useful application of mathematics.

## Applied Mathematical Economics Major

The major consists of 42 credit hours divided according to the following: 18 credit hours in economics courses and 15 credit hours in math, from the required course list below. Electives include one upper-division economics course (3 credit hours) and two mathematics courses (6 credit hours) from the elective course listing below.

### Required Economics Courses:

|           |  |   |
|-----------|--|---|
| ECON 2003 | Principles of Microeconomics           | 3 |
| ECON 2004 | Principles of Macroeconomics           | 3 |
| ECON 3003 | Intermediate Microeconomic Analysis    | 3 |
| ECON 3004 | Intermediate Macroeconomic Analysis    | 3 |
| ECON 4060 | Introduction to Econometrics           | 3 |
| ECON 4065 | Introduction to Mathematical Economics | 3 |

### Required Mathematics Courses:

|              |                         |   |
|--------------|-------------------------|---|
| MATH 1450    | Calculus 1              | 4 |
| MATH 1451    | Calculus 2              | 4 |
| MATH 2450    | Calculus 3              | 4 |
| MATH 4710    | Mathematical Statistics | 3 |
| or MATH 4720 | Statistical Methods     |   |

Elective Economic Courses: Choose one from the following courses 3

|           |  |  |
|-----------|--|--|
| ECON 3001 | Applied Business Economics                   |  |
| ECON 4006 | Public Policies Toward American Industry     |  |
| ECON 4008 | Economics and Law                            |  |
| ECON 4010 | Public Finance                               |  |
| ECON 4012 | Urban and Regional Economics                 |  |
| ECON 4016 | Environmental and Natural Resource Economics |  |
| ECON 4020 | Economics of Labor Markets                   |  |
| ECON 4040 | International Economic Issues                |  |

|   |  |
|---|--|
| ECON 4042   | International Antitrust and Competition Policy |
| ECON 4044   | International Currency Markets                 |
| ECON 4045   | Comparative Economic Development               |
| ECON 4046   | International Trade                            |
| ECON 4048   | The Russian Economy                            |
| ECON 4070   | Economics and Ethics                           |
| ECON 4075   | The Economics of Religion                      |
| ECON 4080   | Money, Banking and Monetary Policy             |
| ECON 4931   | Topics in Economics                            |
| ECON 4953   | Seminar in Economics                           |
| Elective Mathematics Courses: Choose two from the following courses |  |
| MATH 2451   | Differential Equations                         |
| or MATH 4500  | Theory of Differential Equations               |
| MATH 3100   | Linear Algebra and Matrix Theory               |
| MATH 4630   | Mathematical Modeling and Analysis             |
| MATH 4650   | Theory of Optimization                         |
| MATH 4700   | Theory of Probability                          |
| MATH 4760   | Time Series Analysis                           |
| MATH 4780   | Regression Analysis                            |

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Total Credit Hours

42

## Broad Field Science

This major is open only to students enrolled in the College of Education. Students who complete this major with licensure in grades 6 through 12 may be employed to teach:

1. All science in grades 6 through 9 and general science including physical science in grades 10 through 12.
2. Biology, chemistry or physics (area of minor).

Interested students should see the chairpersons of biology, chemistry or physics, their advisers and the College of Education's director of undergraduate advising.

## Broad Field Science Major

The Broad Field Science major consists of nine required common courses for broad field science (32 credit hours) and a minor for teaching certification in either biology, chemistry or physics which consists of an additional five to six courses (17-20 credit hours) for a total of 49-52 credit hours.

Required Courses for all Broad Field Science Majors:

### Biology Courses:

|           |  |   |
|-----------|--|---|
| BIOL 1001 | General Biology 1                      | 3 |
| BIOL 1002 | General Biology 2                      | 3 |
| BIOL 2001 | Principles of Biological Investigation | 3 |

### Chemistry Courses:

|              |                                |   |
|--------------|--------------------------------|---|
| CHEM 1001    | General Chemistry 1            | 4 |
| CHEM 1002    | General Chemistry 2            | 4 |
| CHEM 2111    | Organic Chemistry 1            | 4 |
| or CHEM 2113 | Organic Chemistry for Majors 1 |   |

### Physics Courses:

|              |  |   |
|--------------|--|---|
| PHYS 1001    | General Physics 1                            | 4 |
| or PHYS 1003 | General Physics with Introductory Calculus 1 |   |
| or PHYS 1013 | Classical and Modern Physics with Calculus 1 |   |
| PHYS 1002    | General Physics 2                            | 4 |
| or PHYS 1004 | General Physics with Introductory Calculus 2 |   |
| or PHYS 1014 | Classical and Modern Physics with Calculus 2 |   |

|                    |                                 |    |
|--------------------|---------------------------------|----|
| PHYS 1009          | Earth and Environmental Physics | 3  |
| Total Credit Hours |                                 | 32 |

In addition, Broad Field Science majors must complete an area of concentration in biology, chemistry or physics.

### **Biology minor for teaching certification requirements**

|   |   |       |
|---|---|-------|
| Biology Courses:                        |   |       |
| BIOL 2201                               | Genetics  | 3     |
| BIOL 4101                               | Biochemistry and the Molecular Basis of Biology | 3     |
| and one additional course in Biology:   |   |       |
| BIOL 2301                               | Cell Biology (recommended)                      | 3     |
| Chemistry Courses:                      |   |       |
| CHEM 2112                               | Organic Chemistry 2                             | 4     |
| or CHEM 2114                            | Organic Chemistry for Majors 2                  |       |
| MATH / COSC Course(s):                  |   |       |
| MATH 1410                               | Calculus for the Biological Sciences            | 3     |
| or MATH 1450                            | Calculus 1                                      |       |
| and one additional MATH or COSC course. |   | 2-4   |
| Total Credit Hours                      |   | 18-20 |

### **Chemistry minor for teaching certification requirements**

|                        |   |   |
|------------------------|---|---|
| Chemistry Courses:     |   |   |
| CHEM 2112              | Organic Chemistry 2                             | 4 |
| or CHEM 2114           | Organic Chemistry for Majors 2                  |   |
| CHEM 3201              | Quantitative Analysis                           | 4 |
| Biology Course:        |   |   |
| BIOL 4101              | Biochemistry and the Molecular Basis of Biology | 3 |
| MATH / COSC Course(s): |   |   |
| MATH 1410              | Calculus for the Biological Sciences            | 3 |
| or MATH 1450           | Calculus 1                                      |   |

|                    |                                  |    |
|--------------------|----------------------------------|----|
| COSC 1000          | Introduction to Computer Science | 3  |
| Total Credit Hours |                                  | 17 |

### Physics minor for teaching certification requirements

|                    |  |    |
|--------------------|--|----|
| Physics Courses:   |  |    |
| PHYS 2004          | Modern Physics: Atoms, Particles, and Quanta | 3  |
| PHYS 2005          | Modern Physics: The States of Matter         | 3  |
| MATH Courses:      |  |    |
| MATH 1450          | Calculus 1                                   | 4  |
| MATH 1451          | Calculus 2                                   | 4  |
| MATH 2450          | Calculus 3                                   | 4  |
| Total Credit Hours |  | 18 |

## Science Major For Elementary/Middle Education

The Science major consists of nine required courses (30 credit hours) and two courses (6 credits) in electives chosen from the biology, chemistry or physics courses listed below for a total of 36 credit hours.

#### Required Courses:

|                   |  |   |
|-------------------|--|---|
| ARSC Courses:     |  |   |
| ARSC 1020         | Major Concepts in Modern Science 1     | 4 |
| ARSC 1021         | Major Concepts in Modern Science 2     | 4 |
| Biology Courses:  |  |   |
| BIOL 1001         | General Biology 1                      | 3 |
| BIOL 1002         | General Biology 2                      | 3 |
| BIOL 2001         | Principles of Biological Investigation | 3 |
| Chemistry Course: |  |   |
| CHEM 1001         | General Chemistry 1                    | 4 |
| Physics Courses:  |  |   |
| PHYS 1007         | Survey of Meteorology                  | 3 |
| PHYS 1008         | Astronomy and Space Physics            | 3 |
| PHYS 1009         | Earth and Environmental Physics        | 3 |

Electives: 6 credits from the following:

6

## Biology Courses:

BIOL 1406                      Plants, Pathogens and People

BIOL 2301                      Cell Biology

BIOL 2401                      Ecology

BIOL 3601                      Animal Development

## Chemistry Course:

CHEM 1002                      General Chemistry 2

## Physics Courses:

PHYS 1001                      General Physics 1

PHYS 1002                      General Physics 2

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Total Credit Hours

36



## International Affairs

The major or minor offers interdisciplinary study of international affairs. Students take core courses in international politics and economics and, for the major, additional courses in history, languages, culture and other areas to complete a concentration based either on a theme or a region. By graduation, students will have gained a solid base of knowledge regarding international affairs and the ability to integrate the diverse perspectives of several disciplines to gain subtle understandings of complex problems. For more information visit the Interdisciplinary Major/Minor in International Affairs website (<http://www.marquette.edu/inia/>)

No more than six hours of the credits counted to fulfill an Interdisciplinary International Affairs (INIA) major or minor may be counted toward any other major or minor.

### Interdisciplinary Major in International Affairs

The major consists often courses (30 credit hours). In addition, students must fulfill the background requirements which consists of seven courses (21-22 credit hours) for the major.

Students must also have a demonstrated foreign language competency to the second intermediate (fourth term) level. Students are encouraged to take at least two language courses beyond the intermediate (2002 or 2003) level, and preferably to minor in a foreign language.

Background requirements:

#### History (Western Civilization):

|              |   |   |
|--------------|---|---|
| HIST 1001    | Growth of Western Civilization to 1715    | 3 |
| or HIST 1002 | Growth of Western Civilization since 1715 |   |

#### History Courses: Choose one of the following courses: 3

|           |                         |  |
|-----------|-------------------------|--|
| HIST 1301 | Survey of Latin America |  |
| HIST 1401 | Africa                  |  |
| HIST 1501 | East Asia               |  |

#### Economics Courses:

|           |                              |   |
|-----------|------------------------------|---|
| ECON 2003 | Principles of Microeconomics | 3 |
| ECON 2004 | Principles of Macroeconomics | 3 |

#### Political Science Courses:

|           |                        |   |
|-----------|------------------------|---|
| POSC 2401 | Comparative Politics   | 3 |
| POSC 2601 | International Politics | 3 |

#### Statistics Courses: Choose one of the following courses: 3-4

|           |                              |  |
|-----------|------------------------------|--|
| MATH 1700 | Modern Elementary Statistics |  |
| MANA 2028 | Business Statistics          |  |

|                    |   |       |
|--------------------|---|-------|
| PSYC 2001          | Psychological Measurements and Statistics |       |
| SOCI 2060          | Social Statistics                         |       |
| Total Credit Hours |   | 21-22 |

Requirements for INIA Core:

Political Science Courses:

|           |                   |   |
|-----------|-------------------|---|
| POSC 4601 | International Law | 3 |
|-----------|-------------------|---|

|           |                            |   |
|-----------|----------------------------|---|
| POSC 4611 | International Organization | 3 |
|-----------|----------------------------|---|

|           |                             |   |
|-----------|-----------------------------|---|
| POSC 4631 | World Conflict and Security | 3 |
|-----------|-----------------------------|---|

|   |  |   |
|---|--|---|
| International Political Economy: Choose one of the following courses: |  | 3 |
|---|--|---|

|           |                               |  |
|-----------|-------------------------------|--|
| POSC 4621 | Politics of the World Economy |  |
|-----------|-------------------------------|--|

|           |                                      |  |
|-----------|--------------------------------------|--|
| POSC 4661 | The Political Economy of Development |  |
|-----------|--------------------------------------|--|

|  |  |   |
|--|--|---|
| International Economics Course: Choose one of the following courses: |  | 3 |
|--|--|---|

|           |   |  |
|-----------|---|--|
| ECON 4040 | International Economic Issues (recommended option for non-Economic Relations Concentration) |  |
|-----------|---|--|

|           |  |  |
|-----------|--|--|
| ECON 4044 | International Currency Markets (required for Economic Relations Concentration) |  |
|-----------|--|--|

|           |  |  |
|-----------|--|--|
| ECON 4045 | Comparative Economic Development (recommended option for Economic Relations Concentration) |  |
|-----------|--|--|

|           |   |  |
|-----------|---|--|
| ECON 4046 | International Trade (required for Economic Relations Concentration) |  |
|-----------|---|--|

Senior Capstone Seminar:

|           |  |   |
|-----------|--|---|
| INIA 4997 | Senior Capstone Seminar in International Affairs | 3 |
|-----------|--|---|

|                                |  |    |
|--------------------------------|--|----|
| Concentration Area Requirement |  | 12 |
|--------------------------------|--|----|

|                    |  |    |
|--------------------|--|----|
| Total Credit Hours |  | 30 |
|--------------------|--|----|

In addition, students must complete additional credit hours in one of the following concentrations. At least three of the courses must be numbered 3000 or above.

1. Area Studies
2. Cross-Cultural Studies
3. International Economic Relations
4. International Political-Military Relations
5. International Communication
6. Peace Studies
7. Special Topics

**Notes:**

- INIA 4997 Senior Capstone Seminar in International Affairs is usually completed during the final spring semester of study at Marquette.
- Other courses may satisfy concentration requirements (especially for students who study abroad) but that any substitutions must be approved by the INIA coordinator.

**1. Area Studies (12 credit hours):**

Students in area studies must choose four courses in one area: European Studies, Asian Studies, Latin American Studies or Third World Studies.

European Studies: Choose four of the following courses:

12

|                    |   |
|--------------------|---|
| HIST 3230          | Pre-Revolutionary Europe: 1648 to 1789              |
| HIST 3232          | Reaction, Revolution, and Nationalism: 1814 to 1914 |
| HIST 3235          | Twentieth Century Europe                            |
| HIST 3295          | The Great War": World War I, 1914-18                |
| HIST 3297          | World War II  |
| HIST 4249          | Intellectual History of Modern Europe               |
| HIST 4252          | Modern Britain                                      |
| HIST 4255          | The British Empire                                  |
| HIST 4260          | Modern Ireland                                      |
| HIST 4262          | Modern France                                       |
| HIST 4264          | Modern Germany                                      |
| HIST 4271          | The Russian Revolution and the Soviet Union         |
| HIST 4290          | The French Revolution and Napoleon, 1787 to 1815    |
| POSC 4406          | Public Policy in Industrial Democracies             |
| POSC 4501          | European Politics                                   |
| POSC 4511          | Russian and Post-Soviet Politics                    |
| POSC 4711          | International Politics of Europe                    |
| Total Credit Hours |   |
|                    |   |

12

Asian Studies: Choose four of the following courses:

12

|           |              |
|-----------|--------------|
| HIST 4500 | Modern Japan |
| HIST 4555 | Modern China |

|           |                                     |
|-----------|-------------------------------------|
| JPNS 3200 | Japanese Culture and Civilization   |
| PHIL 3380 | Asian Philosophy                    |
| POSC 4521 | Chinese Politics                    |
| POSC 4531 | Japanese and Korean Politics        |
| POSC 4551 | Politics of the Indian Subcontinent |
| POSC 4731 | International Politics of Asia      |
| THEO 4530 | Islam: Faith and Practice           |
| THEO 4540 | Hinduism, Yoga, and Buddhism        |

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|                    |    |
|--------------------|----|
| Total Credit Hours | 12 |
|--------------------|----|

|   |    |
|---|----|
| Latin American Studies: Choose four of the following courses: | 12 |
|---|----|

|           |  |
|-----------|--|
| ANTH 3242 | Prehistory of South America                                      |
| HIST 4350 | The Caribbean  |
| HIST 4355 | History of Mexico  |
| POSC 4541 | Latin American Politics  |
| POSC 4741 | United States-Latin American Relations                           |
| SPAN 3310 | Peoples and Cultures of Spanish America                          |
| SPAN 4600 | Spanish-American Literature: Pre-Columbian to Baroque            |
| SPAN 4610 | Spanish-American Literature: Eighteenth and Nineteenth Centuries |
| SPAN 4640 | Novels and Novelists in Spanish-America                          |

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|                    |    |
|--------------------|----|
| Total Credit Hours | 12 |
|--------------------|----|

|  |    |
|--|----|
| Third World Studies: Choose four of the following courses: | 12 |
|--|----|

|           |  |
|-----------|--|
| ANTH 3360 | People and Cultures of the Middle East |
| ANTH 4144 | The Rise of Agriculture                |
| ANTH 4316 | Culture Change and Development         |
| ENGL 4840 | Post-Colonial Literature               |
| HIST 3455 | Modern Middle East Since 1500          |
| HIST 4355 | History of Mexico                      |
| HIST 4450 | North Africa                           |
| HIST 4555 | Modern China                           |

|                    |                                     |
|--------------------|-------------------------------------|
| POSC 4521          | Chinese Politics                    |
| POSC 4541          | Latin American Politics             |
| POSC 4551          | Politics of the Indian Subcontinent |
| POSC 4561          | Politics of the Developing World    |
| THEO 4530          | Islam: Faith and Practice           |
| THEO 4540          | Hinduism, Yoga, and Buddhism        |
| <hr/>              |                                     |
| Total Credit Hours | 12                                  |

## 2. Cross-Cultural Studies (12 credit hours):

Cross-Cultural Studies: Choose four of the following courses: 12

|           |  |
|-----------|--|
| ADPR 4700 | Cultural Identity, Media and World Religions                     |
| ANTH 2101 | Cultural Anthropology  |
| ANTH 2203 | Human Geography  |
| ANTH 3312 | Anthropology of Religion   |
| ANTH 4316 | Culture Change and Development                                   |
| CMST 3410 | Intercultural Communication                                      |
| ENGL 4810 | Race, Ethnicity, and Identity in American Literature and Culture |
| ENGL 4840 | Post-Colonial Literature   |
| FREN 3200 | Contributions of the French and Francophone World (GRMN 3200)    |
| FREN 3300 | French Civilization (SPAN 3300)                                  |
| GRMN 3200 | German Contributions to Western Civilization                     |
| ITAL 3200 | Italian Culture and Civilization                                 |
| JPNS 3200 | Japanese Culture and Civilization (ITAL 3200)                    |
| PHIL 3380 | Asian Philosophy   |
| PHIL 3660 | Marx and Marxism   |
| POSC 4431 | Modern Revolutions   |
| POSC 4561 | Politics of the Developing World                                 |
| SOCI 4400 | Social Inequality  |
| SPAN 3300 | Peoples and Cultures of Spain                                    |
| SPAN 3310 | Peoples and Cultures of Spanish America                          |
| THEO 2410 | Christian Faith in Cultural Contexts                             |
| THEO 4210 | History and Theology of the Christian East                       |

|                    |   |    |
|--------------------|---|----|
| THEO 4330          | Theology of the Church  |    |
| THEO 4370          | Protestant Thought and Practice                                 |    |
| THEO 4405          | Christian Theology in Global Contexts                           |    |
| THEO 4420          | Theology, Violence, and Nonviolence                             |    |
| THEO 4500          | Christ and World Religions: Theology of Interreligious Dialogue |    |
| THEO 4510          | Survey of World Religions                                       |    |
| THEO 4520          | Jewish Thought and Practice                                     |    |
| THEO 4530          | Islam: Faith and Practice                                       |    |
| THEO 4540          | Hinduism, Yoga, and Buddhism                                    |    |
| Total Credit Hours |   | 12 |

### 3. International Economic Relations (12 credit hours):

Students with a concentration in international economic relations must complete the INIA major's core, as well as an additional 12 credit hours of course work as listed below:

Required international economics courses:

|  |  |    |
|--|--|----|
| ECON 4044  | International Currency Markets                                 | 3  |
| ECON 4046  | International Trade  | 3  |
| International economic relations courses: Choose two of the following courses: |  | 6  |
| BULA 3040  | The Legal and Regulatory Environment of International Business |    |
| ECON 4016  | Environmental and Natural Resource Economics                   |    |
| ECON 4045  | Comparative Economic Development                               |    |
| ECON 4080  | Money, Banking and Monetary Policy                             |    |
| FINA 4040  | International Finance  |    |
| MANA 4040  | International Management                                       |    |
| MARK 4040  | International Marketing  |    |
| POSC 4406  | Public Policy in Industrial Democracies                        |    |
| POSC 4621  | Politics of the World Economy                                  |    |
| POSC 4641  | Politics of the Illicit Global Economy                         |    |
| POSC 4661  | The Political Economy of Development                           |    |
| Total Credit Hours   |  | 12 |

### 4. International Political-Military Relations (12 credit hours):

International Political-Military Relations: Choose four courses from the following

12

|           |   |
|-----------|---|
| HIST 3118 | American Military History                           |
| HIST 3127 | The Vietnam War Era                                 |
| HIST 3232 | Reaction, Revolution, and Nationalism: 1814 to 1914 |
| HIST 3295 | The Great War": World War I, 1914-18                |
| HIST 4113 | American Foreign Relations 1                        |
| HIST 4114 | American Foreign Relations 2                        |
| HIST 4255 | The British Empire                                  |
| HIST 4298 | The Cold War  |
| JOUR 4700 | News Media and Foreign Policy                       |
| POSC 4376 | American National Security Policy                   |
| POSC 4431 | Modern Revolutions                                  |
| POSC 4701 | United States Foreign Policy                        |
| POSC 4711 | International Politics of Europe                    |
| POSC 4721 | International Politics of the Middle East           |
| POSC 4731 | International Politics of Asia                      |
| POSC 4741 | United States-Latin American Relations              |

Total Credit Hours

12

**5. International Communication (12 credit hours):**

Students in this concentration must complete at least two courses from the College of Communication.

International Communication: Choose four courses from the following

12

College of Communication courses: Choose at least two courses

|           |  |
|-----------|--|
| COMM 4200 | International Communication                  |
| JOUR 4700 | News Media and Foreign Policy                |
| CMST 3410 | Intercultural Communication                  |
| CMST 4270 | Communicating in Multinational Organizations |

College of Arts and Sciences courses:

|           |                              |
|-----------|------------------------------|
| ECON 4046 | International Trade          |
| HIST 4113 | American Foreign Relations 1 |

|                    |  |
|--------------------|--|
| HIST 4114          | American Foreign Relations 2                     |
| HIST 4298          | The Cold War                                     |
| POSC 4376          | American National Security Policy                |
| POSC 4406          | Public Policy in Industrial Democracies          |
| POSC 4421          | Democracy, Authoritarianism, and Totalitarianism |
| POSC 4431          | Modern Revolutions                               |
| POSC 4561          | Politics of the Developing World                 |
| POSC 4701          | United States Foreign Policy                     |
| <hr/>              |  |
| Total Credit Hours | 12   |

**6. Peace Studies (12 credit hours):**

Students in this concentration must complete two courses from each area: Preventing War and Building Peace.

Preventing War: Choose two courses from the following 6

|           |   |
|-----------|---|
| CMST 3100 | Communication and Conflict                |
| CMST 3410 | Intercultural Communication               |
| HIST 3127 | The Vietnam War Era                       |
| HIST 3295 | The Great War": World War I, 1914-18      |
| HIST 3297 | World War II                              |
| HIST 3455 | Modern Middle East Since 1500             |
| HIST 4298 | The Cold War                              |
| POSC 4551 | Politics of the Indian Subcontinent       |
| POSC 4721 | International Politics of the Middle East |

Building Peace: Choose two courses from the following 6

|           |  |
|-----------|--|
| ECON 4016 | Environmental and Natural Resource Economics                     |
| ECON 4045 | Comparative Economic Development                                 |
| ENGL 4810 | Race, Ethnicity, and Identity in American Literature and Culture |
| HIST 3235 | Twentieth Century Europe   |
| POSC 4561 | Politics of the Developing World                                 |
| POSC 4711 | International Politics of Europe                                 |
| POSC 4731 | International Politics of Asia                                   |
| THEO 4420 | Theology, Violence, and Nonviolence                              |
| THEO 4500 | Christ and World Religions: Theology of Interreligious Dialogue  |



THEO 4510

Survey of World Religions

THEO 4530

Islam: Faith and Practice

Total Credit Hours

12

**7. Special Topics:**

Students may work with their advisers to design a concentration on a topic in which they have a special interest. All such concentrations must meet the following conditions:

1. A special topics concentration must include four related three credit upper division courses on a topic in international affairs significantly different than any of the existing concentrations.
2. A special topics concentration must be declared and approved in writing at least a year prior to the student's graduation.
3. The proposal must be signed and approved by the student, the student's adviser and the INIA coordinator.

Other relevant courses and many courses taken while studying abroad may fulfill the concentration requirement with the prior approval of the program coordinator. Any substitutions must be approved by the program coordinator.

**Interdisciplinary Minor in International Affairs**

The minor consists of 6 courses (18 credit hours). In addition, students must fulfill the background requirements for the minor.

Students must also have a demonstrated foreign language competency to the second intermediate (fourth term) level. Students are encouraged to take at least two language courses beyond the intermediate (2002 or 2003) level, and preferably to minor in a foreign language.

Any substitutions must be approved by the program coordinator.

**Background Requirements:**

|                    |                              |    |
|--------------------|------------------------------|----|
| ECON 2003          | Principles of Microeconomics | 3  |
| ECON 2004          | Principles of Macroeconomics | 3  |
| POSC 2401          | Comparative Politics         | 3  |
| POSC 2601          | International Politics       | 3  |
| Total Credit Hours |                              | 12 |

**Program Requirements:**

|           |                               |   |
|-----------|-------------------------------|---|
| POSC 4601 | International Law             | 3 |
| POSC 4611 | International Organization    | 3 |
| POSC 4621 | Politics of the World Economy | 3 |
| POSC 4631 | World Conflict and Security   | 3 |

An upper-division course in international economics. The following course is recommended:

|                          |  |    |
|--------------------------|--|----|
| ECON 4040                | International Economic Issues                    | 3  |
| Senior Capstone Seminar: |  |    |
| INIA 4997                | Senior Capstone Seminar in International Affairs | 3  |
| Total Credit Hours       |  | 18 |

**Note:**

- The INIA 4997 Senior Capstone Seminar in International Affairs is usually taken during the student's last spring semester of study at Marquette.

# Women's and Gender Studies

The Women's and Gender Studies program offers a major or minor that promotes a critical, feminist, and cross-cultural understanding of gender and power in a global context and across disciplinary boundaries. It provides students with the knowledge and skills necessary for just and equitable leadership in professional, civic and religious roles.

Students will gain the knowledge and skills for understanding and recognizing:

- How gender has shaped the world around us and the ways we make sense of it.
- How sexism operates in a dynamic with other systems of oppression historically and in contemporary contexts.
- The diversity of women's experiences and accomplishments.
- The diversity of gendered experiences and perspectives among men and women.
- How to embrace gender diversity and work for justice.

## Women's and Gender Studies (WGST) Major

The interdisciplinary major in Women's and Gender Studies (WGST) consists of one introductory course (3 credit hours), four exploratory courses (12 credit hours), four integrative courses (12 credit hours) and the senior capstone course (3 credit hours) for a total of 30 credit hours.

- Exploratory courses enable students to explore WGST issues as they arise within particular disciplines.
- Integrative courses combine theory with practice or link distinct subjects together.

Introductory Course:

|   |  |    |
|---|--|----|
| WGST 1001   | Introduction to Women's and Gender Studies     | 3  |
| Exploratory Courses - Choose four of the following courses: |  | 12 |
| ANTH 3330   | Women and Men in Cross-Cultural Perspective    |    |
| CMST 4120   | Gender and Communication                       |    |
| EDUC 1210   | Introduction to Schooling in a Diverse Society |    |
| ENGL 4860   | Survey of Women's Literature                   |    |
| HEAL 1025   | Culture and Health                             |    |
| HEAL 1200   | Women's Health                                 |    |
| HIST 4145   | A History of Women in America                  |    |
| HIST 4245   | Women in Western Civilization                  |    |

|  |  |
|--|--|
| PHIL 3770  | Feminist Philosophy                        |
| PSYC 3201  | Introductory Social Psychology             |
| PSYC 3210  | The Psychology of Prejudice                |
| PSYC 4720  | Psychology of Marriage and Family          |
| SOCI 2200  | The Family                                 |
| THEO 4030  | Women in the Bible                         |
| Integrative Courses: Choose four courses from either Group I, or Group II (depending on content & approval): |  |
| Group I  |  |
| COMM 4100  | Mass Media and the American Family         |
| COMM 4500  | Race and Gender Issues in Mass Media       |
| CMST 4110  | Family Communication                       |
| CMST 4360  | Rhetoric of Social Movements               |
| CRLS 4130  | Women, Crime, and Criminal Justice         |
| ECON 4953  | Seminar in Economics                       |
| ENGL 4870  | Studies in Women and Literature            |
| HEAL 4200  | Natural Family Planning                    |
| HIST 4150  | Childhood in America                       |
| MANA 3035  | Diversity in Organizations                 |
| POSC 4361  | Politics of Race, Ethnicity, and Gender    |
| PSYC 3220  | Human Sexuality                            |
| PSYC 3550  | Psychology of Gender Roles                 |
| SOCI 3280  | Race and Family                            |
| SOCI 3550  | Race, Gender and Medicine                  |
| SOWJ 3370  | Family Counseling and Therapy              |
| Group II (depending on content and program director's approval):   |  |
| ECON 4020  | Economics of Labor Markets                 |
| ENGL 2931  | Topics in Literature and Culture           |
| ENGL 4170  | Studies in Language                        |
| ENGL 4460  | The Romantic Period: 1790-1837             |
| ENGL 4470  | Victorian Literature                       |
| ENGL 4480  | The Modernist Period in British Literature |

|                         |  |    |
|-------------------------|--|----|
| ENGL 4490               | The Postmodernist Period in British Literature                   |    |
| ENGL 4520               | American Literature from 1798 to 1865                            |    |
| ENGL 4530               | American Literature from 1865 to 1914                            |    |
| ENGL 4550               | Twentieth-Century American Literature: The Modern Period         |    |
| ENGL 4560               | The Contemporary Period in American Literature: 1945 to Present  |    |
| ENGL 4610               | Individual Authors   |    |
| ENGL 4800               | Studies in Literature and Culture                                |    |
| ENGL 4810               | Race, Ethnicity, and Identity in American Literature and Culture |    |
| ENGL 4820               | Studies in Race and/or Ethnic Literature                         |    |
| ENGL 4931               | Topics in Literature or Writing                                  |    |
| HEAL 1300               | Substance Abuse  |    |
| HEAL 3150               | Alternative and Complementary Therapies                          |    |
| HIST 4931               | Topics in History  |    |
| HIST 4953               | Readings in History  |    |
| HIST 4955               | Undergraduate Seminar in History                                 |    |
| SOCI 4931               | Topics in Sociology  |    |
| SPAN 4550               | Twentieth and Twenty-First Century Spanish Literature            |    |
| Senior Capstone Course: |  |    |
| WGST 4997               | Women's and Gender Studies Capstone Course                       | 3  |
| Total Credit Hours      |  | 30 |

**Notes:**

- Integrative courses: Group I (course content always satisfies WGST requirements); Group II (content varies from term to term, will satisfy requirements according to course title and content with prior approval from director of WGST).
- Other courses relevant to WGST issues may be approved with consent of director of WGST.
- In the senior capstone course, WGST 4997 Women's and Gender Studies Capstone Course, you will integrate your diverse academic experiences within WGST and devise a community-based project that meets your unique interests.

**Women's and Gender Studies (WGST) Minor**

The WGST minor consists of 18 credit hours: WGST 1001 Introduction to Women's and Gender Studies, in addition to 15 credit hours including at least one exploratory course and at least one integrative course, with courses distributed among at least three disciplines.

## Required Course

|           |  |   |
|-----------|--|---|
| WGST 1001 | Introduction to Women's and Gender Studies | 3 |
|-----------|--|---|

|  |    |
|--|----|
| Elective Courses - Choose five courses distributed among at least three disciplines. | 15 |
|--|----|

Exploratory Courses - Choose at least one from the list below:

|           |   |
|-----------|---|
| ANTH 3330 | Women and Men in Cross-Cultural Perspective |
|-----------|---|

|           |                          |
|-----------|--------------------------|
| CMST 4120 | Gender and Communication |
|-----------|--------------------------|

|           |  |
|-----------|--|
| EDUC 1210 | Introduction to Schooling in a Diverse Society |
|-----------|--|

|           |                              |
|-----------|------------------------------|
| ENGL 4860 | Survey of Women's Literature |
|-----------|------------------------------|

|           |                    |
|-----------|--------------------|
| HEAL 1025 | Culture and Health |
|-----------|--------------------|

|           |                |
|-----------|----------------|
| HEAL 1200 | Women's Health |
|-----------|----------------|

|           |                               |
|-----------|-------------------------------|
| HIST 4145 | A History of Women in America |
|-----------|-------------------------------|

|           |                               |
|-----------|-------------------------------|
| HIST 4245 | Women in Western Civilization |
|-----------|-------------------------------|

|           |                     |
|-----------|---------------------|
| PHIL 3770 | Feminist Philosophy |
|-----------|---------------------|

|           |                                |
|-----------|--------------------------------|
| PSYC 3201 | Introductory Social Psychology |
|-----------|--------------------------------|

|           |                             |
|-----------|-----------------------------|
| PSYC 3210 | The Psychology of Prejudice |
|-----------|-----------------------------|

|           |                                   |
|-----------|-----------------------------------|
| PSYC 4720 | Psychology of Marriage and Family |
|-----------|-----------------------------------|

|           |            |
|-----------|------------|
| SOCI 2200 | The Family |
|-----------|------------|

|           |                    |
|-----------|--------------------|
| THEO 4030 | Women in the Bible |
|-----------|--------------------|

Integrative Courses - Choose at least one course:

## Group I

|           |                                    |
|-----------|------------------------------------|
| COMM 4100 | Mass Media and the American Family |
|-----------|------------------------------------|

|           |                                      |
|-----------|--------------------------------------|
| COMM 4500 | Race and Gender Issues in Mass Media |
|-----------|--------------------------------------|

|           |                      |
|-----------|----------------------|
| CMST 4110 | Family Communication |
|-----------|----------------------|

|           |                              |
|-----------|------------------------------|
| CMST 4360 | Rhetoric of Social Movements |
|-----------|------------------------------|

|           |                                    |
|-----------|------------------------------------|
| CRLS 4130 | Women, Crime, and Criminal Justice |
|-----------|------------------------------------|

|           |                      |
|-----------|----------------------|
| ECON 4953 | Seminar in Economics |
|-----------|----------------------|

|           |                                 |
|-----------|---------------------------------|
| ENGL 4870 | Studies in Women and Literature |
|-----------|---------------------------------|

|           |                         |
|-----------|-------------------------|
| HEAL 4200 | Natural Family Planning |
|-----------|-------------------------|

|           |                      |
|-----------|----------------------|
| HIST 4150 | Childhood in America |
|-----------|----------------------|

|   |  |
|---|--|
| MANA 3035   | Diversity in Organizations                                       |
| POSC 4361   | Politics of Race, Ethnicity, and Gender                          |
| PSYC 3220   | Human Sexuality  |
| PSYC 3550   | Psychology of Gender Roles                                       |
| SOCI 3280   | Race and Family  |
| SOCI 3550   | Race, Gender and Medicine  |
| SOWJ 3370   | Family Counseling and Therapy                                    |
| Group II (depending on content and program director's approval) |  |
| ECON 4020   | Economics of Labor Markets                                       |
| ENGL 2931   | Topics in Literature and Culture                                 |
| ENGL 4170   | Studies in Language  |
| ENGL 4460   | The Romantic Period: 1790-1837                                   |
| ENGL 4470   | Victorian Literature   |
| ENGL 4480   | The Modernist Period in British Literature                       |
| ENGL 4490   | The Postmodernist Period in British Literature                   |
| ENGL 4520   | American Literature from 1798 to 1865                            |
| ENGL 4530   | American Literature from 1865 to 1914                            |
| ENGL 4550   | Twentieth-Century American Literature: The Modern Period         |
| ENGL 4560   | The Contemporary Period in American Literature: 1945 to Present  |
| ENGL 4610   | Individual Authors   |
| ENGL 4800   | Studies in Literature and Culture                                |
| ENGL 4810   | Race, Ethnicity, and Identity in American Literature and Culture |
| ENGL 4820   | Studies in Race and/or Ethnic Literature                         |
| ENGL 4931   | Topics in Literature or Writing                                  |
| HEAL 1300   | Substance Abuse  |
| HEAL 3150   | Alternative and Complementary Therapies                          |
| HIST 4931   | Topics in History  |
| HIST 4953   | Readings in History  |
| HIST 4955   | Undergraduate Seminar in History                                 |
| SOCI 4931   | Topics in Sociology  |

**Notes:**

- Integrative courses: Group I (course content always satisfies WGST requirements); Group II (content varies from term to term, will satisfy requirements according to course title and content with prior approval from director of WGST).
- Other courses relevant to WGST issues may be approved with consent of director of WGST.



# Asian Studies

The interdisciplinary minor in Asian studies introduces students to the culture, history, politics, economics, geography, anthropology, sociology, philosophies and religions of Asia.

## Asian Studies Minor

The minor consists of 18 credit hours: 6 credit hours from culture and 6 credit hours from history and society. The remaining 6 credit hours may be chosen from any of the listed courses or may consist in whole or part of courses approved by relevant departments and the program coordinator.

### Requirements:

|   |  |    |
|---|--|----|
| Culture Courses: Choose two of the following courses:             |  | 6  |
| CMST 3410   | Intercultural Communication                                    |    |
| CHNS 3200   | Chinese Culture and Civilization                               |    |
| CHNS 3210   | Chinese Literature in English Translation                      |    |
| JPNS 3200   | Japanese Culture and Civilization                              |    |
| JPNS 3210   | Japanese Literature in English Translation:                    |    |
| PHIL 3380   | Asian Philosophy   |    |
| THEO 4530   | Islam: Faith and Practice                                      |    |
| THEO 4540   | Hinduism, Yoga, and Buddhism                                   |    |
| History and Society Courses: Choose two of the following courses: |  | 6  |
| HIST 3127   | The Vietnam War Era  |    |
| HIST 4500   | Modern Japan   |    |
| HIST 4555   | Modern China   |    |
| POSC 4521   | Chinese Politics   |    |
| POSC 4531   | Japanese and Korean Politics                                   |    |
| POSC 4551   | Politics of the Indian Subcontinent                            |    |
| POSC 4731   | International Politics of Asia                                 |    |
| SOCI 4997   | Capstone Seminar in Sociology (when offerings are appropriate) |    |
| Elective Courses: Choose two from courses listed above.           |  | 6  |
| Total Credit Hours  |  | 18 |

### Note:

- Elective courses may be chosen from the Culture and History and Society courses listed above or may consist of courses approved by the program director.



## Broad Field Social Science

The interdisciplinary minor in Broad Field Social Science is open only to students from the College of Education who have a second major in history, political science (only Concentration I: Politics, according to the directions given in the Political Science section of this bulletin), psychology or sociology. This minor allows students to prepare for the license extension offered by the Wisconsin Department of Public Instruction for Broad Field Social Science.

The interdisciplinary minor in Broad Field Social Science consists of seven courses (21 credit hours). Students must choose seven courses from among the six groups of courses listed below. Courses for the minor must come from five of the six groups. None of the seven courses taken for the minor can be in a group that corresponds to the student's major. (For example, if the student is majoring in anthropology, the student should not take any courses in the anthropology area listed below.)

Required Areas: Choose one course from each area (except for major area): 21

Group I - History: Choose 0 or one course from the following:

|           |   |
|-----------|---|
| HIST 1001 | Growth of Western Civilization to 1715    |
| HIST 1002 | Growth of Western Civilization since 1715 |
| HIST 1101 | Introduction to American History          |

Group II - Anthropology: Choose 0 or one course from the following:

|           |                           |
|-----------|---------------------------|
| ANTH 1001 | Introductory Anthropology |
| ANTH 2101 | Cultural Anthropology     |
| ANTH 2203 | Human Geography           |

Group III - Sociology: Choose 0 or one course from the following:

|           |                                  |
|-----------|----------------------------------|
| SOCI 1001 | Principles of Sociology          |
| SOCI 2200 | The Family                       |
| SOCI 3200 | Social Problems in Urban Society |

Group IV - Psychology: Choose 0 or one course from the following:

|           |   |
|-----------|---|
| PSYC 1001 | General Psychology  |
| PSYC 2101 | Introduction to Life-Span Developmental Psychology for Nursing Students |
| PSYC 3201 | Introductory Social Psychology  |

Group V - Political Science: Choose 0 or one course from the following:

|           |                        |
|-----------|------------------------|
| POSC 2201 | American Politics      |
| POSC 2401 | Comparative Politics   |
| POSC 2601 | International Politics |

Group VI - Economics: Choose 0 or one course from the following:

|           |                           |
|-----------|---------------------------|
| ECON 1001 | Introduction to Economics |
|-----------|---------------------------|

|           |                              |
|-----------|------------------------------|
| ECON 2003 | Principles of Microeconomics |
|-----------|------------------------------|

|           |                              |
|-----------|------------------------------|
| ECON 2004 | Principles of Macroeconomics |
|-----------|------------------------------|

Elective: Choose one additional course from one of the areas listed above (except for major area):

---

Total Credit Hours

21

# Catholic Studies

The interdisciplinary minor in Catholic studies offers students an integrated understanding of Catholicism as a unique form of Christianity, examining its distinctive doctrines, historical changes in institutional forms and world-views and impact upon culture, art and literature. The minor combines courses in theology, philosophy, English and history and other special courses that deal with Catholic Christianity, among other topics, from their various perspectives.

## Catholic Studies Minor

The minor consists of 18 credit hours: one theology course (3 credit hours), one history course (3 credit hours), one English or philosophy course (3 credit hours) and three upper division courses (9 credit hours) from approved courses with at least two of the four areas represented (theology, philosophy, English and history) as listed below.

### Required Courses:

|  |                                |    |
|--|--------------------------------|----|
| Theology Course: Choose one course from the following              |                                | 3  |
| THEO 2210  | Theology Through the Centuries |    |
| THEO 4200  | Theology in the Early Church   |    |
| THEO 4330  | Theology of the Church         |    |
| THEO 4340  | Sacraments and Christian Life  |    |
| History Course:  |                                |    |
| HIST 4130  | Religion and American Life     | 3  |
| English or Philosophy: Choose one course from designated electives |                                | 3  |
| *Upper-division electives: Choose three courses.                   |                                | 9  |
| Total Credit Hours   |                                | 18 |

### Note:

- Upper-division electives must be chosen from approved courses with at least two of the four areas represented (theology, philosophy, English and history).
- For more specific information regarding approved courses, consult the program coordinator.

## Environmental Ethics

Students who opt for this minor will acquire the intellectual resources needed to reflect on the ethical dimensions of environmental issues. Five courses develop the knowledge and skills in the natural sciences and in the theological and philosophical traditions that are relevant to the minor. It culminates in a capstone seminar in which the ethical questions pertaining to a particular environmental problem are identified and approaches to its resolution are developed. When appropriate and feasible, the capstone incorporates student service in public or private organizations, government agencies, and businesses that are addressing the problem. Students are encouraged to take additional courses that complement the minor and to draw upon them during their capstone experience.

Faculty work together to schedule the required courses so the minor can be completed in two years. Faculty also identify students in their courses who are seeking the minor, guide their learning toward its goals and help students understand how their courses relate to the minor.

Students pursuing the minor gather at least once a semester to discuss the program or a pertinent topic. Upon completion of the minor, each student is presented with a certificate listing the required and complementary courses taken and service learning completed. Consult program director to declare and track courses toward this minor as early as possible.

## Environmental Ethics Minor

The Interdisciplinary Minor in Environmental Ethics consists of six courses (18 credit hours) from the courses listed below.

Required Course:

|  |  |   |
|--|--|---|
| INEE 4997  | Capstone Seminar for Interdisciplinary Minor in Environmental Ethics | 3 |
| Science Courses: Choose at least one of the following courses:             |  | 3 |
| BIOL 2401  | Ecology  |   |
| or BIOL 3401   | Advanced Ecology   |   |
| PHYS 1009  | Earth and Environmental Physics                                      |   |
| CEEN 3510  | Environmental Engineering (CEEN majors only)                         |   |
| Humanities Courses: Choose at least one of the following courses:          |  | 3 |
| PHIL 3350  | Philosophy of the Environment  |   |
| THEO 4440  | Foundations of Ecological Ethics                                     |   |
| Applied Disciplines Courses: Choose at least one of the following courses: |  | 3 |
| ECON 4016  | Environmental and Natural Resource Economics                         |   |
| ENGL 4931  | Topics in Literature or Writing (nature writing)                     |   |
| JOUR 4330  | Health, Science and Environmental Communication                      |   |

|   |    |
|---|----|
| Electives - Choose two courses from areas listed above. | 6  |
| Total Credit Hours                                      | 18 |

**Note:**

- Recommended complementary courses: ANTH 2203 Human Geography and THEO 4430 Theology and the Natural Sciences.

## Ethics

The interdisciplinary minor in ethics provides an opportunity for students to explore the moral dimensions of human life and to develop the ability for critical ethical analysis in their personal and professional lives. By encouraging students to seek values across the curriculum in a formal and disciplined way, it prepares graduates not only for the modern workplace, but for the world in its most urgent and deepest complexity. First-level courses introduce the basis of ethical reasoning within philosophy and Christian faith. Second-level courses engage students in the application of ethical theories to particular ethical issues or problems (e.g., business ethics, environmental ethics, poverty). Third-level courses allow students to explore the contexts of various institutions and social domains (e.g., the legal system, social and institutional dimensions of race and gender, mass communication) in which ethical decisions must be made.

### Ethics Minor

The Ethics minor consists of seven courses (21 credits) chosen from the areas listed below:

Ethical Theory Courses: Choose two of the following courses: 6

|              |                             |
|--------------|-----------------------------|
| PHIL 2310    | Theory of Ethics            |
| THEO 2400    | Christian Discipleship      |
| or THEO 4400 | Christian Faith and Justice |

Applied Ethics Courses: Choose two courses, at least one philosophy: 6

|           |   |
|-----------|---|
| COMM 3900 | Ethical Problems of Mass Communications |
| PHIL 4320 | Contemporary Ethical Problems           |
| PHIL 4330 | Business Ethics                         |
| PHIL 4335 | Biomedical Ethics                       |
| THEO 4440 | Foundations of Ecological Ethics        |
| THEO 4450 | Medical Ethics                          |
| THEO 4490 | Studies in Moral Theology               |

Contemporary Interfaces with Ethics: Choose two courses: 6

|           |  |
|-----------|--|
| COMM 4400 | Mass Communication Theory and Research |
| HEAL 2100 | Primary Health Care Concepts           |
| MANA 3002 | Business and Its Environment           |
| MARK 4070 | Marketing and Society                  |
| PHIL 3350 | Philosophy of the Environment          |
| PHIL 3710 | Philosophy of State                    |
| PHIL 3730 | Philosophy of Community                |



|                           |  |    |
|---------------------------|--|----|
| PHIL 3740                 | Technology and the Human Condition             |    |
| PHIL 3750                 | Philosophy of Law                              |    |
| PHIL 3751                 | Philosophy and History of Crime and Punishment |    |
| PHIL 3770                 | Feminist Philosophy                            |    |
| PHIL 3780                 | Africana Philosophy                            |    |
| POSC 2801                 | Justice and Power                              |    |
| SOCI 3200                 | Social Problems in Urban Society               |    |
| SOCI 4130                 | Sociology of Human Values                      |    |
| THEO 4420                 | Theology, Violence, and Nonviolence            |    |
| Required Capstone Course: |  |    |
| INET 4953                 | Seminar for Interdisciplinary Minor in Ethics  | 3  |
| Total Credit Hours        |  | 21 |

**Notes:**

- Other courses subject to approval of program director.
- Additional courses subject to special approval by the director of the Center of Ethics Study.

## Family Studies

The interdisciplinary minor in family studies allows students to combine theoretical and practical perspectives on the family and to become familiar with the various methodologies academic disciplines use to develop insights into the family.

### Family Studies Minor

The minor consists of six courses (18 credit hours/17 credits for nursing students taking the NURS 3400-3401 sequence): two required courses (6 credit hours) and four courses (12 credit hours) of electives with at least one course from categories I-III listed below. Any substitutions must be approved by the program coordinator. For more information regarding declaring the minor and updates of approved courses see the Family Studies website (<http://www.marquette.edu/family/requirements.html>).

#### Notes:

- SOCI 2200 The Family should be taken before other courses in the minor, or at least as soon as the student has selected the minor.
- INFS 4953 Interdisciplinary Seminar in Family Studies should be taken last after the other five courses have been completed or during the student's last year of study.
- Additional courses may be acceptable toward the requirements. See the program coordinator to receive prior approval for any courses not listed above or for any substitutions.

#### Required Courses:

|  |   |    |
|--|---|----|
| SOCI 2200  | The Family                                  | 3  |
| INFS 4953  | Interdisciplinary Seminar in Family Studies | 3  |
| Elective Courses: Choose four courses with at least one from each category listed below: |   | 12 |

#### Category I- Family as Experience

|           |   |
|-----------|---|
| ANTH 3330 | Women and Men in Cross-Cultural Perspective |
| ENGL 4710 | Studies in Genre                            |
| HEAL 1025 | Culture and Health                          |
| HIST 4150 | Childhood in America                        |
| HIST 4245 | Women in Western Civilization               |
| PHIL 3730 | Philosophy of Community                     |
| SOCI 3280 | Race and Family                             |
| THEO 4410 | Family, Church, and Society                 |

#### Category II - Family as System Within Society:

|  |  |
|--|--|
| COMM 4100  | Mass Media and the American Family   |
| CMST 4130  | Communication and Urban Families   |
| CMST 4953  | Seminar in Communication Studies   |
| EDUC 1220  | Psychology of Human Development in Children and Adolescents in a Diverse Society (Education majors only) |
| PSYC 2101  | Introduction to Life-Span Developmental Psychology for Nursing Students                                  |
| PSYC 3101  | Developmental Psychology: Conception Through Adolescence   |
| PSYC 3120  | Developmental Psychology: Adulthood and Aging  |
| PSYC 3550  | Psychology of Gender Roles (for non-PSYC majors)   |
| PSYC 4720  | Psychology of Marriage and Family (PSYC majors only)   |
| SOCI 4300  | Sociology of Aging   |
| SOCI 4450  | Sociology of Sex and Gender  |
| SOCI 4931  | Topics in Sociology  |
| Category III - Family As Resource For Human Needs: |  |
| CMST 4110  | Family Communication   |
| CRLS 2100  | Juvenile Delinquency and Juvenile Justice  |
| CRLS 4640  | Family Violence and Public Intervention  |
| EDUC 4217  | Children and Youth with Exceptional Needs  |
| NURS 3400  | Childbearing Family Nursing--Theory (for nursing students)   |
| NURS 3401  | Childbearing Family Nursing--Practicum (for nursing students)  |
| PHTH 7515  | Pathophysiology and Aging  |
| PSYC 3130  | The Psychology of the Exceptional Child  |
| PSYC 3410  | Childhood Psychopathology  |
| SOWJ 3001  | Social Welfare Policy and Programs   |
| SOWJ 3370  | Family Counseling and Therapy  |
| Total Credit Hours                                 |  |

## Justice and Peace

The interdisciplinary minor in justice and peace provides students with the opportunity to explore systematically the nature of justice and peace and the challenges and paths toward realizing justice and peace in the world in which they live.

### Justice and Peace Minor

The minor consists of seven courses (21 credit hours) in the following five areas. To enhance the interdisciplinary experience, no more than two of the five courses can be taken in any single discipline.

#### A. Conceptualizing Justice and Peace

|  |                               |    |
|--|-------------------------------|----|
| INJP 2010  | Introduction to Peace Studies | 3  |
| Electives - Choose five courses from groups B - D. |                               | 15 |

#### B. Bridging Social Communities - Choose at least one course from the following:

|           |  |
|-----------|--|
| ADPR 4700 | Cultural Identity, Media and World Religions                     |
| ANTH 2101 | Cultural Anthropology  |
| ANTH 3330 | Women and Men in Cross-Cultural Perspective                      |
| ANTH 3360 | People and Cultures of the Middle East                           |
| CMST 3100 | Communication and Conflict                                       |
| CMST 3410 | Intercultural Communication                                      |
| CMST 4400 | Cross-Cultural Communication in the United States                |
| ENGL 4810 | Race, Ethnicity, and Identity in American Literature and Culture |
| ENGL 4820 | Studies in Race and/or Ethnic Literature                         |
| HIST 4135 | African-American History   |
| HIST 4245 | Women in Western Civilization                                    |
| PHIL 3350 | Philosophy of the Environment                                    |
| PHIL 3730 | Philosophy of Community  |
| PHIL 3770 | Feminist Philosophy  |
| PHIL 3780 | Africana Philosophy  |
| PSYC 3201 | Introductory Social Psychology                                   |
| PSYC 3210 | The Psychology of Prejudice                                      |
| SOWJ 2200 | Human Behavior in the Social Environment                         |
| THEO 4400 | Christian Faith and Justice                                      |
| THEO 4500 | Christ and World Religions: Theology of Interreligious Dialogue  |

|           |                           |
|-----------|---------------------------|
| THEO 4510 | Survey of World Religions |
|-----------|---------------------------|

|           |                             |
|-----------|-----------------------------|
| THEO 4520 | Jewish Thought and Practice |
|-----------|-----------------------------|

|           |                           |
|-----------|---------------------------|
| THEO 4530 | Islam: Faith and Practice |
|-----------|---------------------------|

|           |                              |
|-----------|------------------------------|
| THEO 4540 | Hinduism, Yoga, and Buddhism |
|-----------|------------------------------|

C. Promoting Social and Economic Justice - Choose at least one course from the following:

|           |                 |
|-----------|-----------------|
| ANTH 2203 | Human Geography |
|-----------|-----------------|

|           |                                |
|-----------|--------------------------------|
| ANTH 4316 | Culture Change and Development |
|-----------|--------------------------------|

|           |  |
|-----------|--|
| ECON 4016 | Environmental and Natural Resource Economics |
|-----------|--|

|           |                                  |
|-----------|----------------------------------|
| ECON 4045 | Comparative Economic Development |
|-----------|----------------------------------|

|           |                    |
|-----------|--------------------|
| HIST 4255 | The British Empire |
|-----------|--------------------|

|           |               |
|-----------|---------------|
| HIST 4350 | The Caribbean |
|-----------|---------------|

|           |                  |
|-----------|------------------|
| PHIL 3660 | Marx and Marxism |
|-----------|------------------|

|           |                        |
|-----------|------------------------|
| POSC 4216 | American Public Policy |
|-----------|------------------------|

|           |   |
|-----------|---|
| POSC 4361 | Politics of Race, Ethnicity, and Gender |
|-----------|---|

|           |   |
|-----------|---|
| POSC 4406 | Public Policy in Industrial Democracies |
|-----------|---|

|           |                    |
|-----------|--------------------|
| POSC 4431 | Modern Revolutions |
|-----------|--------------------|

|           |                   |
|-----------|-------------------|
| POSC 4501 | European Politics |
|-----------|-------------------|

|           |                  |
|-----------|------------------|
| POSC 4521 | Chinese Politics |
|-----------|------------------|

|           |                              |
|-----------|------------------------------|
| POSC 4531 | Japanese and Korean Politics |
|-----------|------------------------------|

|           |                         |
|-----------|-------------------------|
| POSC 4541 | Latin American Politics |
|-----------|-------------------------|

|           |                                  |
|-----------|----------------------------------|
| POSC 4561 | Politics of the Developing World |
|-----------|----------------------------------|

|           |                               |
|-----------|-------------------------------|
| POSC 4621 | Politics of the World Economy |
|-----------|-------------------------------|

|           |           |
|-----------|-----------|
| POSC 4851 | Karl Marx |
|-----------|-----------|

|           |                           |
|-----------|---------------------------|
| SOCI 3250 | Race and Ethnic Relations |
|-----------|---------------------------|

|           |                   |
|-----------|-------------------|
| SOCI 4400 | Social Inequality |
|-----------|-------------------|

|           |  |
|-----------|--|
| SOWJ 1001 | Introduction to Social Welfare and Justice |
|-----------|--|

|           |                                    |
|-----------|------------------------------------|
| SOWJ 3001 | Social Welfare Policy and Programs |
|-----------|------------------------------------|

|           |                                       |
|-----------|---------------------------------------|
| THEO 4405 | Christian Theology in Global Contexts |
|-----------|---------------------------------------|

D. Resolving Violent Conflict - Choose at least one course from the following:

|           |   |
|-----------|---|
| CRLS 4640 | Family Violence and Public Intervention |
|-----------|---|

|           |                              |
|-----------|------------------------------|
| CRLS 4660 | Criminal Violence in America |
|-----------|------------------------------|

|           |                          |
|-----------|--------------------------|
| HIST 3235 | Twentieth Century Europe |
|-----------|--------------------------|

|  |   |    |
|--|---|----|
| HIST 3295                                | The Great War": World War I, 1914-18      |    |
| HIST 3297                                | World War II                              |    |
| HIST 3455                                | Modern Middle East Since 1500             |    |
| HIST 4298                                | The Cold War                              |    |
| POSC 4551                                | Politics of the Indian Subcontinent       |    |
| POSC 4601                                | International Law                         |    |
| POSC 4611                                | International Organization                |    |
| POSC 4631                                | World Conflict and Security               |    |
| POSC 4711                                | International Politics of Europe          |    |
| POSC 4721                                | International Politics of the Middle East |    |
| POSC 4731                                | International Politics of Asia            |    |
| POSC 4741                                | United States-Latin American Relations    |    |
| THEO 4420                                | Theology, Violence, and Nonviolence       |    |
| E. Capstone Seminar in Justice and Peace |   |    |
| INJP 4997                                | Capstone Seminar in Justice and Peace     | 3  |
| Total Credit Hours                       |   | 21 |

**Note:**

- Relevant upper-division independent study, special topics and internship courses can count toward the course requirements in Groups B-D with the prior approval of the program coordinator.
- Any substitutions must be approved by the program coordinator.

# Medieval Studies

The interdisciplinary minor in medieval studies integrates courses in English, foreign languages, literature, history, philosophy, and theology to introduce students to the major movements and achievements of the Latin Christian West from approximately A.D. 500 to 1500.

## Medieval Studies Minor

The minor consists of seven courses (21 credit hours) divided as listed below:

### Required Course

|           |   |   |
|-----------|---|---|
| INMS 4952 | Medieval Models Colloquium (Medieval Studies) | 3 |
|-----------|---|---|

|  |   |
|--|---|
| History Courses - Choose one of the following: | 3 |
|--|---|

|           |                 |  |
|-----------|-----------------|--|
| HIST 3210 | The Middle Ages |  |
|-----------|-----------------|--|

|           |              |  |
|-----------|--------------|--|
| HIST 4212 | The Crusades |  |
|-----------|--------------|--|

|           |                  |  |
|-----------|------------------|--|
| HIST 4213 | Medieval England |  |
|-----------|------------------|--|

|  |   |
|--|---|
| English or Foreign Language Courses - Choose one of the following: | 3 |
|--|---|

|           |                            |  |
|-----------|----------------------------|--|
| ENGL 4410 | British Literature to 1500 |  |
|-----------|----------------------------|--|

|           |         |  |
|-----------|---------|--|
| ENGL 4620 | Chaucer |  |
|-----------|---------|--|

### Medieval Course Offerings:

|           |                                 |  |
|-----------|---------------------------------|--|
| ENGL 4931 | Topics in Literature or Writing |  |
|-----------|---------------------------------|--|

|           |                                      |  |
|-----------|--------------------------------------|--|
| FREN 4500 | The Middle Ages in France: 1050-1450 |  |
|-----------|--------------------------------------|--|

|           |                             |  |
|-----------|-----------------------------|--|
| FOLA 3210 | Women in Foreign Literature |  |
|-----------|-----------------------------|--|

|           |  |  |
|-----------|--|--|
| FOLA 4931 | Topics in Foreign Language, Culture and Literature |  |
|-----------|--|--|

|           |  |  |
|-----------|--|--|
| GRMN 4525 | German Literature: Twelfth to the Eighteenth Century |  |
|-----------|--|--|

|           |  |  |
|-----------|--|--|
| SPAN 4500 | Race, Culture and Religion in Early Spanish Literature |  |
|-----------|--|--|

### Philosophy and Theology Required Courses:

|           |                           |   |
|-----------|---------------------------|---|
| PHIL 3620 | Early Medieval Philosophy | 3 |
|-----------|---------------------------|---|

|           |                             |   |
|-----------|-----------------------------|---|
| THEO 4230 | Theology in the Middle Ages | 3 |
|-----------|-----------------------------|---|

|                                |   |
|--------------------------------|---|
| *Electives: Choose two courses | 6 |
|--------------------------------|---|

|                    |    |
|--------------------|----|
| Total Credit Hours | 21 |
|--------------------|----|

### Notes:

- Electives may also be chosen from appropriate offerings of HIST 4931 Topics in History, HIST 4953 Readings in History, PHIL 3625 Late Medieval and Renaissance Philosophy, PHIL 4931 Topics in Philosophy, THEO 4220 St. Augustine: The Man and the Theologian and THEO 4290 Studies in Historical Theology.
- Any substitutions must be approved by the program coordinator.



## Public History

The interdisciplinary minor in public history allows students to examine the ways the historic method is applied outside of the classroom. For students seeking a career in public history, the minor will better prepare them for advanced study in specialized programs. In addition to history courses, students can explore related disciplines such as anthropology and can take specialized courses in fields such as marketing, management or advertising. Students interested in this minor should see the public history adviser in the Department of History. As students select courses to meet the requirements for the University Core of Common Studies (UCCS), they should pay close attention to the list of recommended courses for this minor.

Recommended courses that satisfy UCCS requirements include:

|   |   |
|---|---|
| ANTH 1001   | Introductory Anthropology                 |
| COMM 1100   | Contemporary Presentation                 |
| or ENGL 1002  | Rhetoric and Composition 2                |
| ECON 2003   | Principles of Microeconomics              |
| HIST 1101   | Introduction to American History          |
| Statistics Courses - at least one of the following: |   |
| MANA 2028   | Business Statistics                       |
| MATH 1700   | Modern Elementary Statistics              |
| PSYC 2001   | Psychological Measurements and Statistics |
| SOCI 2060   | Social Statistics                         |

## Public History Minor

The minor in public history consists of seven courses (21 credit hours), including three required courses in history and one upper division history course appropriate to the public history area in which the student envisions working (12 credit hours); and three elective courses (9 credit hours).

### Note:

- History majors pursuing the interdisciplinary minor in public history should note that only two courses may overlap between a major and a minor in the Klingler College of Arts and Sciences.

### Required History Courses

|           |  |   |
|-----------|--|---|
| HIST 4100 | Public History                           | 3 |
| HIST 4101 | Applied History                          | 3 |
| HIST 4986 | Internship in Public and Applied History | 3 |

Upper Division Course in Public History

|  |  |    |
|--|--|----|
| Choose one of the following:                       |  | 3  |
| HIST 3101  | The British Atlantic World to 1713                                 |    |
| HIST 3104  | The Civil War Era  |    |
| HIST 4135  | African-American History   |    |
| HIST 4953  | Readings in History (depending on relevance of topic)              |    |
| HIST 4955  | Undergraduate Seminar in History (depending on relevance of topic) |    |
| *Elective Courses - Choose three of the following: |  | 9  |
| ACCO 2030  | Principles of Financial Accounting                                 |    |
| ACCO 2031  | Principles of Managerial Accounting                                |    |
| ADPR 1400  | Advertising Principles   |    |
| ANTH 3201  | Archaeology and Prehistoric Cultures                               |    |
| ANTH 3250  | Prehistory of North America  |    |
| ENGL 4931  | Topics in Literature or Writing (Writing for Nonprofit Agencies)   |    |
| ENTP 3001  | Understanding Entrepreneurship                                     |    |
| HURE 3001  | Management of Human Resources                                      |    |
| HURE 4080  | Training and Development   |    |
| MANA 3001  | Behavior and Organization  |    |
| MARK 3001  | Introduction to Marketing  |    |
| MARK 4020  | Integrated Marketing Communications                                |    |
| Total Credit Hours                                 |  | 21 |

**Note:**

- \*Elective Courses: Only two business administration courses may be included among the three electives.
- All courses should be selected with the approval of the public history adviser.

# Urban Affairs

## Urban Affairs Minor

The interdisciplinary minor in urban affairs introduces students to urban issues from multiple viewpoints. The minor consists of seven courses (21 credit hours). Students must take at least one course from each of the following four areas listed below in addition to choosing three elective courses.

Economics Courses - Choose one of the following: 3

|           |                              |
|-----------|------------------------------|
| ECON 4010 | Public Finance               |
| ECON 4012 | Urban and Regional Economics |

History Courses - Choose one of the following: 3

|           |  |
|-----------|--|
| HIST 4986 | Internship in Public and Applied History |
| HIST 4140 | American Urban History                   |
| HIST 4931 | Topics in History                        |
| HIST 4953 | Readings in History                      |
| HIST 4955 | Undergraduate Seminar in History         |

Political Science Courses - Choose one of the following: 3

|           |                       |
|-----------|-----------------------|
| POSC 4281 | Urban Public Policy   |
| POSC 4291 | Urban Politics        |
| POSC 4321 | Business and Politics |

Social and Cultural Sciences - Choose one of the following: 3

|           |                                    |
|-----------|------------------------------------|
| ANTH 3100 | Urban Anthropology                 |
| SOCI 4270 | Urban Sociology                    |
| SOWJ 3001 | Social Welfare Policy and Programs |

Electives - Choose three courses from the following: 9

|           |  |
|-----------|--|
| CEEN 4340 | Urban Planning for Civil Engineers           |
| CRLS 3300 | Police and Society                           |
| CRLS 3600 | Victimology                                  |
| CRLS 4931 | Topics in Criminology and Law                |
| ECON 4016 | Environmental and Natural Resource Economics |
| HIST 4135 | African-American History                     |

|                    |  |    |
|--------------------|--|----|
| JOUR 4140          | Depth Reporting                                  |    |
| JOUR 4310          | Communication of Urban Issues                    |    |
| PHIL 3730          | Philosophy of Community                          |    |
| REAL 3001          | Principles of Commercial Real Estate Development |    |
| SOCI 3200          | Social Problems in Urban Society                 |    |
| SOCI 3250          | Race and Ethnic Relations                        |    |
| SOCI 4100          | Urban Life                                       |    |
| SOCI 4270          | Urban Sociology                                  |    |
| Total Credit Hours |  | 21 |

**Notes:**

- See approved electives list from the program coordinator.
- An interdisciplinary urban affairs major can be created for individual students in consultation with the program coordinator. A proposal for an interdisciplinary urban affairs major must be approved by the college's associate dean for academic affairs.

# Mathematics, Statistics and Computer Science

## **Chairperson: Gary S. Krenz, Ph.D.**

Department of Mathematics, Statistics and Computer Science website (<http://www.mscs.mu.edu/mscs/>)

The Department of Mathematics, Statistics and Computer Science offers a unique interdisciplinary learning environment with areas of study ranging from pure and applied mathematics to computer science, statistics and mathematics education.

The Mathematics major (MATH) explores the interplay between the pure theory and the practical applications of mathematics. The mathematics curriculum can be tailored to an individual's interests with possible tracks in pure mathematics, applied mathematics or actuarial science, statistics, as well as, secondary education. In any case, the curriculum is designed to provide technical skills for growth within the discipline and for success in a wide variety of careers.

The Computer Science major (COSC) provides students with an understanding of the central ideas and methods used to solve real problems with software. Students will practice the many skills required to build computer systems that address problems in scientific, engineering, and business domains. Most of all, the major aims to prepare students for long-term success in a rapidly changing field that provides the computer technology underpinning our modern world.

The Computational Mathematics major (COMA) blends the subjects of computer science and applied mathematics providing a balance, which would otherwise require a double major to achieve. Furthermore, the curriculum teaches the skills necessary for careers in today's technical environment.

The Mathematics for Elementary School Teachers major (MELT) is for College of Education students who are seeking teaching certification at the elementary school level, while obtaining strong mathematical preparation. This program is designed to prepare "mathematics specialists" who provide vision, focus and leadership in elementary schools.

## Major in Mathematics

The major in mathematics consists of 39 credit hours of mathematics courses, including five required math courses (18 credit hours); one math sequence (two courses - 6 credit hours); at least one course from each of the three groups (Group 1 - Pure Mathematics, Group 2 - Applied Mathematics and Group 3 - Statistics, for a total of 9 credit hours); and two courses (6 credit hours) of upper division MATH courses.

### **Note:**

- Students majoring in mathematics must also complete the following course in computer science:  
COSC 1010 Introduction to Computer Programming.

### Required Mathematics Courses:

|           |                                  |   |
|-----------|----------------------------------|---|
| MATH 1450 | Calculus 1                       | 4 |
| MATH 1451 | Calculus 2                       | 4 |
| MATH 2350 | Foundations of Mathematics       | 3 |
| MATH 2450 | Calculus 3                       | 4 |
| MATH 3100 | Linear Algebra and Matrix Theory | 3 |

Choose one of the following sequences:

6

|                          |  |
|--------------------------|--|
| MATH 4120<br>& MATH 4121 | Abstract Algebra 1<br>and Abstract Algebra 2   |
| MATH 4200<br>& MATH 4201 | Intermediate Analysis 1<br>and Intermediate Analysis 2                                       |
| MATH 4200<br>& MATH 4210 | Intermediate Analysis 1<br>and Complex Variables   |
| MATH 4200<br>& MATH 4450 | Intermediate Analysis 1<br>and Topology  |
| MATH 4420<br>& MATH 4030 | Foundations of Geometry<br>and Concepts in Geometry and Calculus from an Advanced Standpoint |
| MATH 4500<br>& MATH 4510 | Theory of Differential Equations<br>and Elementary Partial Differential Equations            |
| MATH 4670<br>& MATH 4650 | Applied Combinatorial Mathematics<br>and Theory of Optimization                              |
| MATH 4700<br>& MATH 4710 | Theory of Probability<br>and Mathematical Statistics   |

Choose at least one additional course from each of the three groups listed below:

9

## Group 1 - Pure Mathematics

|           |                         |
|-----------|-------------------------|
| MATH 4120 | Abstract Algebra 1      |
| MATH 4121 | Abstract Algebra 2      |
| MATH 4200 | Intermediate Analysis 1 |
| MATH 4201 | Intermediate Analysis 2 |
| MATH 4210 | Complex Variables       |
| MATH 4320 | Theory of Numbers       |
| MATH 4420 | Foundations of Geometry |
| MATH 4450 | Topology                |

## Group 2 - Applied Mathematics

|           |  |
|-----------|--|
| MATH 3520 | Operational Methods in Physics and Engineering |
| MATH 4500 | Theory of Differential Equations               |
| MATH 4510 | Elementary Partial Differential Equations      |
| MATH 4540 | Numerical Analysis                             |
| MATH 4630 | Mathematical Modeling and Analysis             |

|   |                                   |
|---|-----------------------------------|
| MATH 4650   | Theory of Optimization            |
| MATH 4670   | Applied Combinatorial Mathematics |
| Group 3 - Statistics                                  |                                   |
| MATH 4700   | Theory of Probability             |
| MATH 4710   | Mathematical Statistics           |
| MATH 4720   | Statistical Methods               |
| MATH 4740   | Biostatistical Methods and Models |
| MATH 4760   | Time Series Analysis              |
| MATH 4780   | Regression Analysis               |
| Choose 6 credit hours of upper-division MATH courses. |                                   |
| Total Credit Hours                                    |                                   |
| 39  |                                   |

**Note:**

- Occasionally MATH 4931 Topics in Mathematics or Statistics may be approved as a substitute within a student's program of study for an above listed course.

**Typical Program for Mathematics Major**

| Freshman                  |       |                                      |       |
|---------------------------|-------|--------------------------------------|-------|
| First Term                | Hours | Second Term                          | Hours |
| ENGL 1001                 | 3     | ENGL 1002                            | 3     |
| Foreign Language          | 3-4   | Foreign Language                     | 3-4   |
| HIST 1001 or 1002         | 3     | History or Social-Behavioral Science | 3     |
| MATH 1450                 | 4     | MATH 1451                            | 4     |
| Social-Behavioral Science | 3     | Elective                             | 3     |
|                           | 16-17 |                                      | 16-17 |
| Sophomore                 |       |                                      |       |
| First Term                | Hours | Second Term                          | Hours |
| MATH 2450                 | 4     | MATH 3100                            | 3     |
| MATH 2350                 | 3     | Literature                           | 3     |
| Literature                | 3     | Natural Science                      | 4     |
| Natural Science           | 4     | PHIL 1001                            | 3     |
| Elective                  | 3     | Elective                             | 3     |
|                           | 17    |                                      | 16    |

| <b>Junior</b>                  |       |                                |       |
|--------------------------------|-------|--------------------------------|-------|
| First Term                     | Hours | Second Term                    | Hours |
| MATH Sequence (part 1)         | 3     | MATH Sequence (part 2)         | 3     |
| MATH Group 1 (Pure)            | 3     | MATH Group 3 (Statistics)      | 3     |
| COSC 1010                      | 4     | PHIL 2310                      | 3     |
| THEO 1001                      | 3     | Electives                      | 6-9   |
| Electives                      | 3-6   |                                |       |
|                                | 16-19 |                                | 15-18 |
| <b>Senior</b>                  |       |                                |       |
| First Term                     | Hours | Second Term                    | Hours |
| MATH Group 2 (Applied)         | 3     | MATH elective (upper division) | 3     |
| MATH Elective (upper division) | 3     | Theology (third level)         | 3     |
| Philosophy (upper division)    | 3     | Diverse Cultures elective      | 3     |
| Theology (second level)        | 3     | Electives                      | 6-9   |
| Electives                      | 3-6   |                                |       |
|                                | 15-18 |                                | 15-18 |
| Total credit hours: 126-140    |       |                                |       |

**Note:** A minimum of 128 credits is required for the degree.

## Department of Public Instruction Certification for Mathematics Majors

To pursue Department of Public Instruction certification, College of Education students are required to fulfill the requirements of a mathematics major (39 credit hours of mathematics courses) as listed below. In addition to the 39 credit hours, students must complete an introductory computer science course (4 credit hours) and the mathematics teaching methodology course (3 credit hours) for a total of 46 credit hours as listed below.

### Notes:

- Students majoring in mathematics must also complete COSC 1010 Introduction to Computer Programming
- MATH 3030 The Teaching of Mathematics is required as part of the state certification program and must be completed before student teaching.
- From the beginning of their work toward a degree, students should consult with both the department adviser for Mathematics Education and the Director of Teacher Education in the College of Education about the appropriate sequence of courses.



Required:

|                          |  |   |
|--------------------------|--|---|
| MATH 1450                | Calculus 1   | 4 |
| MATH 1451                | Calculus 2   | 4 |
| MATH 2350                | Foundations of Mathematics   | 3 |
| MATH 2450                | Calculus 3   | 4 |
| MATH 3100                | Linear Algebra and Matrix Theory   | 3 |
| MATH 4420<br>& MATH 4030 | Foundations of Geometry<br>and Concepts in Geometry and Calculus from an Advanced Standpoint | 6 |

And the following Group courses:

Group 1 - Pure Mathematics

|           |                    |   |
|-----------|--------------------|---|
| MATH 4120 | Abstract Algebra 1 | 3 |
|-----------|--------------------|---|

Group 2 - Applied Mathematics

|           |                                    |   |
|-----------|------------------------------------|---|
| MATH 4630 | Mathematical Modeling and Analysis | 3 |
|-----------|------------------------------------|---|

Group 3 - Statistics

|           |                     |   |
|-----------|---------------------|---|
| MATH 4720 | Statistical Methods | 3 |
|-----------|---------------------|---|

Electives

|              |  |   |
|--------------|--|---|
| MATH 4670    | Applied Combinatorial Mathematics  | 3 |
| or MATH 4700 | Theory of Probability  |   |
| MATH 4040    | Concepts in High School Algebra and Number Theory from an Advance Standpoint | 3 |

|                    |  |    |
|--------------------|--|----|
| Total Credit Hours |  | 39 |
|--------------------|--|----|

## Minor in Mathematics

The minor in mathematics consists of 24 credit hours of mathematics courses, including four required math courses (15 credit hours) and an additional 9 credit hours of upper division math courses as listed below:

Required Courses:

|              |                            |   |
|--------------|----------------------------|---|
| MATH 1450    | Calculus 1                 | 4 |
| MATH 1451    | Calculus 2                 | 4 |
| MATH 2450    | Calculus 3                 | 4 |
| MATH 2350    | Foundations of Mathematics | 3 |
| or MATH 2451 | Differential Equations     |   |

|   |    |
|---|----|
| Electives - Choose at least nine additional hours of upper-division MATH courses. | 9  |
| Total Credit Hours  | 24 |

## Department of Public Instruction Certification for Mathematics Minor

To pursue Department of Public Instruction certification for a minor in mathematics, College of Education students are required to complete eight required MATH courses (26 credit hours) as well as completing MATH 3030 (3 credit hours), for a total of 29 credit hours as listed below.

Required Courses:

|  |  |    |
|--|--|----|
| MATH 1450  | Calculus 1   | 4  |
| MATH 1451  | Calculus 2   | 4  |
| MATH 2350  | Foundations of Mathematics   | 3  |
| MATH 3100  | Linear Algebra and Matrix Theory   | 3  |
| MATH 4040  | Concepts in High School Algebra and Number Theory from an Advance Standpoint | 3  |
| MATH 4120  | Abstract Algebra 1   | 3  |
| MATH 4420  | Foundations of Geometry  | 3  |
| MATH 4720  | Statistical Methods  | 3  |
| The following must be completed before student teaching: |  |    |
| MATH 3030  | The Teaching of Mathematics  | 3  |
| Total Credit Hours                                       |  | 29 |

## Major in Computer Science

The major in computer science consists of nine required COSC courses (29 credit hours) and 12 credit hours of upper-division COSC courses, for a total of 41 credit hours of COSC courses. In addition, each student must complete four required MATH courses (14 credit hours) and an additional 3 credit hours of upper-division MATH courses for a total of 17 credit hours of mathematics courses.

Required Computer Science Courses:

|           |                                      |   |
|-----------|--------------------------------------|---|
| COSC 1010 | Introduction to Computer Programming | 4 |
| COSC 1020 | Object-Oriented Software Design      | 4 |
| COSC 2100 | Data Structures and Algorithms 1     | 3 |
| COSC 2200 | Hardware Systems                     | 3 |
| COSC 3100 | Data Structures and Algorithms 2     | 3 |
| COSC 3250 | Operating Systems                    | 3 |
| COSC 3410 | Programming Languages                | 3 |

|  |                                  |    |
|--|----------------------------------|----|
| COSC 4920  | Principles of Design             | 3  |
| COSC 4998  | Senior Design Project            | 3  |
| Electives - Choose 12 credit hours of upper-division COSC courses.               |                                  | 12 |
| Required Mathematics Courses:  |                                  |    |
| MATH 1450  | Calculus 1                       | 4  |
| MATH 1451  | Calculus 2                       | 4  |
| MATH 2100  | Discrete Mathematics             | 3  |
| MATH 3100  | Linear Algebra and Matrix Theory | 3  |
| Mathematics Elective - Choose 3 additional hours of upper-division MATH courses. |                                  | 3  |
| Total Credit Hours   |                                  | 58 |

## Typical Program for Computer Science Majors

| Freshman                  |       |                                   |       |
|---------------------------|-------|-----------------------------------|-------|
| First Term                | Hours | Second Term                       | Hours |
| COSC 1010                 | 4     | COSC 1020                         | 4     |
| MATH 1450*                | 4     | MATH 1451                         | 4     |
| Foreign Language          | 3-4   | Foreign Language                  | 3-4   |
| HIST 1001 or 1002         | 3     | History/Social-Behavioral Science | 3     |
| ENGL 1001                 | 3     | ENGL 1002                         | 3     |
|                           | 17-18 |                                   | 17-18 |
| Sophomore                 |       |                                   |       |
| First Term                | Hours | Second Term                       | Hours |
| COSC 2100                 | 3     | COSC 3100                         | 3     |
| COSC 2200                 | 3     | COSC 3250                         | 3     |
| MATH 2100                 | 3     | MATH 3100                         | 3     |
| Social-Behavioral Science | 3     | PHIL 1001                         | 3     |
| THEO 1001                 | 3     | Literature                        | 3     |
|                           | 15    |                                   | 15    |
| Junior                    |       |                                   |       |
| First Term                | Hours | Second Term                       | Hours |
| COSC 3410                 | 3     | Computer 3xxx/4xxx                | 3     |
| Computer 3xxx/4xxx        | 3     | MATH 3xxx/4xxx                    | 3     |

|                             |              |                           |              |
|-----------------------------|--------------|---------------------------|--------------|
| Literature                  | 3            | PHIL 2310                 | 3            |
| Natural Science             | 3-4          | Natural Science           | 3-4          |
| Elective                    | 3            | Elective                  | 3            |
|                             | 15-16        |                           | 15-16        |
| <b>Senior</b>               |              |                           |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>        | <b>Hours</b> |
| COSC 4920                   | 3            | COSC 3xxx/4xxx            | 3            |
| COSC 3xxx/4xxx              | 3            | COSC 4998                 | 3            |
| Philosophy (upper division) | 3            | Theology (third level)    | 3            |
| Theology (second level)     | 3            | Diverse Cultures elective | 3            |
| Electives                   | 6            | Elective                  | 3            |
|                             | 18           |                           | 15           |
| Total credit hours: 127-131 |              |                           |              |

**Note:** A minimum of 128 credits is required for the degree.

- \* Potential computer science majors who have taken a university-level calculus course in high school should discuss with the department the possibility of credit by examination for MATH 1450 Calculus 1.

## Minor in Computer Science

The minor in computer science consists of 20 credit hours of computer science courses, including four required COSC courses (14 credit hours) and 6 additional credit hours of upper-division COSC elective courses. In addition, each student must complete a required MATH course (3 credit hours) as listed below:

Required Courses:

|   |                                      |   |
|---|--------------------------------------|---|
| COSC 1010   | Introduction to Computer Programming | 4 |
| COSC 1020   | Object-Oriented Software Design      | 4 |
| COSC 2100   | Data Structures and Algorithms 1     | 3 |
| COSC 2200   | Hardware Systems                     | 3 |
| Electives - Choose 6 credit hours of upper-division COSC courses. |                                      | 6 |

Required Mathematics Course:

|                    |                      |    |
|--------------------|----------------------|----|
| MATH 2100          | Discrete Mathematics | 3  |
| Total Credit Hours |                      | 23 |

## Minor in Software Development

The minor in software development consists of 20 credit hours of computer science courses, including four required COSC courses (14 credit hours) and 6 additional credit hours of upper-division COSC elective courses. In addition, each student must complete a required MATH course (3 credit hours) as listed below:

### Required Courses:

|   |                                       |   |
|---|---------------------------------------|---|
| COSC 1010   | Introduction to Computer Programming  | 4 |
| COSC 1020   | Object-Oriented Software Design       | 4 |
| COSC 2100   | Data Structures and Algorithms 1      | 3 |
| COSC 4860   | Component-Based Software Construction | 3 |
| Electives - Choose 6 credit hours of upper-division COSC courses. |                                       | 6 |

### Required Mathematics Course:

|                    |                      |    |
|--------------------|----------------------|----|
| MATH 2100          | Discrete Mathematics | 3  |
| Total Credit Hours |                      | 23 |

## Major in Computational Mathematics

The major in computational mathematics consists of 50 credit hours of computer science and mathematics courses as listed below:

### Required Computer Sciences Courses:

|  |                                      |   |
|--|--------------------------------------|---|
| COSC 1010  | Introduction to Computer Programming | 4 |
| COSC 1020  | Object-Oriented Software Design      | 4 |
| COSC 2100  | Data Structures and Algorithms 1     | 3 |
| COSC 2200  | Hardware Systems                     | 3 |
| Computer Science Elective - Choose one of the following: |                                      | 3 |
| COSC 3250  | Operating Systems                    |   |
| COSC 3410  | Programming Languages                |   |

### Required Mathematics Courses:

|           |                                  |   |
|-----------|----------------------------------|---|
| MATH 1450 | Calculus 1                       | 4 |
| MATH 1451 | Calculus 2                       | 4 |
| MATH 2350 | Foundations of Mathematics       | 3 |
| MATH 2450 | Calculus 3                       | 4 |
| MATH 3100 | Linear Algebra and Matrix Theory | 3 |

|  |   |    |
|--|---|----|
| MATH 4630  | Mathematical Modeling and Analysis        | 3  |
| MATH 4710  | Mathematical Statistics                   | 3  |
| or MATH 4720   | Statistical Methods                       |    |
| MATH 4540  | Numerical Analysis                        | 3  |
| Mathematics Electives - Choose two of the following: |   | 6  |
| MATH 4200  | Intermediate Analysis 1                   |    |
| MATH 4500  | Theory of Differential Equations          |    |
| MATH 4510  | Elementary Partial Differential Equations |    |
| MATH 4650  | Theory of Optimization                    |    |
| MATH 4700  | Theory of Probability                     |    |
| MATH 4740  | Biostatistical Methods and Models         |    |
| Total Credit Hours                                   |   | 50 |

## Typical Program for Computational Mathematics Majors

| Freshman                  |       |                                   |       |
|---------------------------|-------|-----------------------------------|-------|
| First Term                | Hours | Second Term                       | Hours |
| COSC 1010                 | 4     | COSC 1020                         | 4     |
| MATH 1450                 | 4     | MATH 1451                         | 4     |
| ENGL 1001                 | 3     | ENGL 1002                         | 3     |
| Foreign Language          | 3-4   | Foreign Language                  | 3-4   |
| HIST 1001 or 1002         | 3     | History/Social Behavioral Science | 3     |
|                           | 17-18 |                                   | 17-18 |
| Sophomore                 |       |                                   |       |
| First Term                | Hours | Second Term                       | Hours |
| COSC 2200                 | 3     | COSC 2100                         | 3     |
| MATH 2450 <sup>2,3</sup>  | 4     | MATH 3100                         | 3     |
| MATH 2350 <sup>2,3</sup>  | 3     | PHIL 1001                         | 3     |
| Social-Behavioral Science | 3     | Electives                         | 6     |
| Elective                  | 3     |                                   |       |
|                           | 16    |                                   | 15    |

| <b>Junior</b>               |              |                           |              |
|-----------------------------|--------------|---------------------------|--------------|
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>        | <b>Hours</b> |
| COSC 3410 (or elective)     | 3            | COSC 3250 (or elective)   | 3            |
| Mathematics elective        | 3            | Mathematics elective      | 3            |
| Literature                  | 3            | Literature                | 3            |
| Natural Science             | 4            | Natural Science           | 4            |
| THEO 1001                   | 3            | PHIL 2310                 | 3            |
|                             | 16           |                           | 16           |
| <b>Senior</b>               |              |                           |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>        | <b>Hours</b> |
| MATH 4540                   | 3            | MATH 4710 or 4720         | 3            |
| MATH 4630                   | 3            | Theology (third level)    | 3            |
| Philosophy (upper division) | 3            | Diverse Cultures elective | 3            |
| Theology (second level)     | 3            | Electives                 | 6-9          |
| Electives                   | 3-6          |                           |              |
|                             | 15-18        |                           | 15-18        |
| Total credit hours: 127-135 |              |                           |              |

**Note:** A minimum of 128 credits is required for the degree.

## Major in Mathematics for Elementary School Teachers (MELT)

This major is for students in the College of Education enrolled in the middle childhood/early adolescence teacher education program (grades 1-8). The major in mathematics for elementary teachers consists of eleven required mathematics courses for a total of 31 credit hours as listed below.

### **Note:**

- From the beginning of their work toward a degree, students should consult with both a department adviser and the director of teacher education in the College of Education about the appropriate sequence of courses. University and state requirements for teacher certification are described in the College of Education section of this bulletin.

### Required Courses:

|           |   |   |
|-----------|---|---|
| MATH 1400 | Elements of Calculus 1                                | 3 |
| MATH 2030 | Problem Solving and Reasoning for Teachers            | 3 |
| MATH 2031 | Number Systems and Operations for Elementary Teachers | 2 |
| MATH 2032 | Algebra and Geometry for Teachers                     | 2 |

|                    |                                    |    |
|--------------------|------------------------------------|----|
| MATH 2350          | Foundations of Mathematics         | 3  |
| MATH 3100          | Linear Algebra and Matrix Theory   | 3  |
| MATH 4300          | History of Mathematical Ideas      | 3  |
| MATH 4320          | Theory of Numbers                  | 3  |
| MATH 4420          | Foundations of Geometry            | 3  |
| MATH 4630          | Mathematical Modeling and Analysis | 3  |
| MATH 4720          | Statistical Methods                | 3  |
| Total Credit Hours |                                    | 31 |

## Typical Program for Mathematics for Elementary School Teachers Majors

| Freshman            |       |                          |       |
|---------------------|-------|--------------------------|-------|
| First Term          | Hours | Second Term              | Hours |
| ARSC 1020           | 4     | ARSC 1021                | 4     |
| EDUC 1210           | 3     | EDUC 1220                | 3     |
| ENGL 1001           | 3     | ENGL 1002 or COMM 1100   | 3     |
| Foreign Language 1  | 4     | Foreign Language 2       | 4     |
| THEO 1001           | 3     | MATH 1400                | 3     |
| Service Learning    |       |                          |       |
|                     | 17    |                          | 17    |
| Sophomore           |       |                          |       |
| First Term          | Hours | Second Term              | Hours |
| EDUC 2227           | 3     | HIST 1301, 1401, or 1501 | 3     |
| POSC 2201           | 3     | EDUC 2330                | 3     |
| Literature elective | 3     | PHIL 1001                | 3     |
| MATH 2350           | 3     | THEO 1001                | 3     |
| HIST 1101           | 3     | MATH 3100                | 3     |
| Field Experience 1  |       | MATH 4300 or 4320        | 3     |
|                     | 15    |                          | 18    |
| Junior              |       |                          |       |
| First Term          | Hours | Second Term              | Hours |
| PHIL 2310           | 3     | EDUC 3240                | 3     |



|                             |              |                        |              |
|-----------------------------|--------------|------------------------|--------------|
| EDUC 2347                   | 4            | EDUC 4317              | 3            |
| EDUC 4217                   | 3            | EDUC 4357              | 4            |
| MATH 2030                   | 3            | MATH 2031 or EDUC 1964 | 2            |
| MATH 4420                   | 3            | MATH 4300 or 4320      | 3            |
| Field Experience 2          |              | MATH 4630              | 3            |
|                             |              | Field Experience 3     |              |
|                             | 16           |                        | 18           |
| <b>Senior</b>               |              |                        |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |
| EDUC 4297                   | 4            | EDUC 4966              | 9-15         |
| EDUC 4540                   | 3            |                        |              |
| EDUC 4964                   | 4            |                        |              |
| MATH 2032 or EDUC 2964      | 2            |                        |              |
| MATH 4720                   | 3            |                        |              |
| Senior Level Practicum      |              |                        |              |
|                             | 16           |                        | 9-15         |
| Total credit hours: 126-132 |              |                        |              |

**Note:** A minimum of 128 credits is required for the degree.

# Philosophy

**Chairperson: James B. South, Ph.D.**

Department of Philosophy website

The Marquette Philosophy Department is a community of teachers and scholars who aim to enable students in all disciplines by developing interpretive, critical, analytical and communicative skills necessary for personal, intellectual and moral development, cultural literacy and achievement in the complexities of life in the twenty-first century.

In addition to its role in the University Core of Common Studies, the department offers a major with three tracks which students can select based on their interests and educational goals: History of Philosophy; Social, Political and Legal Philosophy; and Ethics and Values. The skills developed in the major are applicable to any subject matter, and in any human context, are sought after by employers in many fields and help to explain why philosophy majors on average score the highest overall scores on the LSAT (Law School Admissions Test) and Graduate Record Exam (GRE) exams.

Philosophy as an investigation of the enduring questions facing humanity -- What is the human being?, What should the human being do?, What is the relationship of the human being to the world around him/herself? and What is the relationship of the human being to the transcendent? -- encourages the student to be reflective about his/her human life. Philosophy asks the student to evaluate critically the civilization in which he/she lives while emphasizing the communal nature of human existence and our need to live with others.

## Major in Philosophy

The major in philosophy consists of 30 credit hours, including four required courses (12 credit hours), three philosophy electives and three courses (9 credit hours) in one of the three areas of concentration listed below.

Required Courses:

|   |                               |   |
|---|-------------------------------|---|
| PHIL 1000   | Logic (PHIL 4000 recommended) | 3 |
| or PHIL 4000  | Modern Logic                  |   |
| PHIL 1001   | Philosophy of Human Nature    | 3 |
| PHIL 2310   | Theory of Ethics              | 3 |
| PHIL 3410   | Metaphysics                   | 3 |
| or PHIL 3450  | Philosophy of Knowledge       |   |
| Electives: Choose three PHIL courses                  |                               | 9 |
| Concentrations: Choose one of the areas listed below: |                               | 9 |

History of Philosophy:

Required Course:

|              |                         |
|--------------|-------------------------|
| PHIL 3610    | Ancient Philosophy      |
| or PHIL 3650 | Early Modern Philosophy |

Electives: Choose two courses from the following:

|           |   |
|-----------|---|
| PHIL 3610 | Ancient Philosophy                          |
| PHIL 3620 | Early Medieval Philosophy                   |
| PHIL 3630 | Pragmatism and American Philosophy          |
| PHIL 3625 | Late Medieval and Renaissance Philosophy    |
| PHIL 3640 | Twentieth Century Anglo-American Philosophy |
| PHIL 3650 | Early Modern Philosophy                     |
| PHIL 3660 | Marx and Marxism                            |
| PHIL 3665 | Phenomenology and Existentialism            |
| PHIL 3670 | Nineteenth-Century German Philosophy        |

Social, Political and Legal Philosophy:

|           |  |
|-----------|--|
| PHIL 3660 | Marx and Marxism                               |
| PHIL 3710 | Philosophy of State                            |
| PHIL 3730 | Philosophy of Community                        |
| PHIL 3740 | Technology and the Human Condition             |
| PHIL 3750 | Philosophy of Law                              |
| PHIL 3751 | Philosophy and History of Crime and Punishment |
| PHIL 3770 | Feminist Philosophy                            |
| PHIL 3780 | Africana Philosophy                            |

Ethics and Values:

|           |                               |
|-----------|-------------------------------|
| PHIL 3350 | Philosophy of the Environment |
| PHIL 3370 | Philosophy of Art             |
| PHIL 3380 | Asian Philosophy              |
| PHIL 3780 | Africana Philosophy           |
| PHIL 4320 | Contemporary Ethical Problems |
| PHIL 4330 | Business Ethics               |
| PHIL 4335 | Biomedical Ethics             |

---

Total Credit Hours

30

## Minor in Philosophy

The philosophy minor consists of seven courses (21 credit hours) including four required courses (12 credit hours) and three elective philosophy courses (9 credit hours) as listed below:

## Required Courses:

|  |                            |    |
|--|----------------------------|----|
| PHIL 1000                                  | Logic                      | 3  |
| or PHIL 4000                               | Modern Logic               |    |
| PHIL 1001                                  | Philosophy of Human Nature | 3  |
| PHIL 2310                                  | Theory of Ethics           | 3  |
| PHIL 3410                                  | Metaphysics                | 3  |
| or PHIL 3450                               | Philosophy of Knowledge    |    |
| Electives: Choose three philosophy courses |                            | 9  |
| Total Credit Hours                         |                            | 21 |

# Physics

**Chairperson: Benjamin L. Brown, Ph.D.**

Department of Physics website (<http://www.marquette.edu/physics/>)

The Physics Department at Marquette offers courses that prepare students for graduate study in physics as well as employment and further study in a variety of fields. Students achieve a general understanding of leading edge computational, theoretical and experimental approaches to explaining diverse natural phenomena from sub atomic particles to exotic stars and galaxies. The methods of physics develop powerful problem solving skills that find application in many disciplines. Physics graduates can go on to graduate study in areas as diverse as medicine, law, engineering and finance, as well as mainstream areas of physics such as particle physics, astrophysics, solid state, atomic and molecular physics. Minors are offered in Astrophysics and Biophysics.

## Major in Physics

The major in physics consists of a **common physics core**: one physics sequence of two courses (8 credit hours), five required physics courses (14 credit hours) for a total of 22 credit hours. In addition, 8 credit hours of upper division physics electives complete the major, for a total of 30 credit hours. Physics majors must also complete four required mathematics courses (16 credit hours) and two chemistry courses (8 credit hours) for a total of 24 credit hours of background course work.

### Note:

- Students may develop areas of concentration that prepare them for specific careers. These concentrations build on the foundation of the common physics core. Students should refer to the section, Areas of Concentration in Physics.

Common Physics Core: 22 credit hours

Required Physics Sequence: Choose one of the following: 8

|                          |  |
|--------------------------|--|
| PHYS 1001<br>& PHYS 1002 | General Physics 1<br>and General Physics 2 |
|--------------------------|--|

|                          |  |
|--------------------------|--|
| PHYS 1003<br>& PHYS 1004 | General Physics with Introductory Calculus 1<br>and General Physics with Introductory Calculus 2 |
|--------------------------|--|

|                          |  |
|--------------------------|--|
| PHYS 1013<br>& PHYS 1014 | Classical and Modern Physics with Calculus 1<br>and Classical and Modern Physics with Calculus 2 |
|--------------------------|--|

Required Physics Courses:

|           |  |   |
|-----------|--|---|
| PHYS 2004 | Modern Physics: Atoms, Particles, and Quanta | 3 |
| PHYS 2005 | Modern Physics: The States of Matter         | 3 |
| PHYS 2055 | Electronics Lab                              | 2 |
| PHYS 3011 | Classical Mechanics                          | 3 |
| PHYS 4031 | Electricity and Magnetism 1                  | 3 |

|  |    |
|--|----|
| Electives: Upper-division Physics courses: | 8  |
| Total Credit Hours                         | 30 |

**Note:**

- PHYS 1013 Classical and Modern Physics with Calculus 1 and PHYS 1014 Classical and Modern Physics with Calculus 2 are studio style courses recommended for students considering a physics major.

## Additional Mathematics and Chemistry Course Requirements:

|                      |                        |    |
|----------------------|------------------------|----|
| Mathematics Courses: |                        |    |
| MATH 1450            | Calculus 1             | 4  |
| MATH 1451            | Calculus 2             | 4  |
| MATH 2450            | Calculus 3             | 4  |
| MATH 2451            | Differential Equations | 4  |
| Chemistry Courses:   |                        |    |
| CHEM 1001            | General Chemistry 1    | 4  |
| CHEM 1002            | General Chemistry 2    | 4  |
| Total Credit Hours   |                        | 24 |

**Typical Program for Physics Majors**

|                   |              |                    |              |
|-------------------|--------------|--------------------|--------------|
| <b>Freshman</b>   |              |                    |              |
| <b>First Term</b> | <b>Hours</b> | <b>Second Term</b> | <b>Hours</b> |
| ENGL 1001         | 3            | ENGL 1002          | 3            |
| Foreign Language  | 3-4          | Foreign Language   | 3-4          |
| MATH 1450         | 4            | MATH 1451          | 4            |
| PHYS 1013         | 4            | PHYS 1014          | 4            |
|                   |              | PHYS 1018          | 0            |
|                   | 14-15        |                    | 14-15        |
| <b>Sophomore</b>  |              |                    |              |
| <b>First Term</b> | <b>Hours</b> | <b>Second Term</b> | <b>Hours</b> |
| CHEM 1001         | 4            | CHEM 1002          | 4            |
| Elective          | 3            | Elective           | 3            |
| HIST 1001 or 1002 | 3            | MATH 2451          | 4            |
| MATH 2450         | 4            | PHYS 2005          | 3            |

|                             |              |                           |              |
|-----------------------------|--------------|---------------------------|--------------|
| PHYS 2004                   | 3            | PHYS 2055                 | 2            |
|                             | 17           |                           | 16           |
| <b>Junior</b>               |              |                           |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>        | <b>Hours</b> |
| Elective                    | 3            | Diverse Cultures elective | 3            |
| PHIL 1001                   | 3            | PHIL 2310                 | 3            |
| PHYS 3011                   | 3            | Social-Behavioral Science | 3            |
| PHYS 4031                   | 3            | Physics electives         | 8            |
| THEO 1001                   | 3            |                           |              |
| Literature                  | 3            |                           |              |
|                             | 18           |                           | 17           |
| <b>Senior</b>               |              |                           |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>        | <b>Hours</b> |
| Philosophy (upper division) | 3            | Literature                | 3            |
| History/Social Science      | 3            | Electives                 | 11           |
| Theology                    | 3            | Theology (third level)    | 3            |
| Electives                   | 6            |                           |              |
|                             | 15           |                           | 17           |
| Total credit hours: 128-130 |              |                           |              |

**For Students Considering Graduate Study in Physics:**

To meet admission expectations for graduate study in physics, students should complete the common physics core for the major in physics listed above, in addition to the following recommended curriculum.

**Physics Courses:**

|                            |                                |   |
|----------------------------|--------------------------------|---|
| PHYS 3056                  | Contemporary Physics Lab 1     | 2 |
| PHYS 4012                  | Quantum Mechanics              | 3 |
| PHYS 4024                  | Modern Optics                  | 3 |
| PHYS 4032                  | Electricity and Magnetism 2    | 3 |
| PHYS 4057                  | Contemporary Physics Lab 2     | 2 |
| PHYS 4062                  | Introduction to Thermodynamics | 3 |
| <b>Mathematics Course:</b> |                                |   |
| MATH 4210                  | Complex Variables              | 3 |

|   |                                     |    |
|---|-------------------------------------|----|
| Additional Course: 3 credit hours in upper-division MATH or |                                     | 3  |
| PHYS 2048   | Mathematical Methods for Physicists |    |
| Total Credit Hours  |                                     | 22 |

## Minor in Physics

The minor in physics consists of a total of 20 credit hours: one required physics sequence (8 credit hours) and 12 credit hours in physics elective courses as listed below:

|   |  |    |
|---|--|----|
| Required Physics Sequence: Choose one of the following: |  | 8  |
| PHYS 1001<br>& PHYS 1002                                | General Physics 1<br>and General Physics 2   |    |
| PHYS 1003<br>& PHYS 1004                                | General Physics with Introductory Calculus 1<br>and General Physics with Introductory Calculus 2 |    |
| PHYS 1013<br>& PHYS 1014                                | Classical and Modern Physics with Calculus 1<br>and Classical and Modern Physics with Calculus 2 |    |
| Electives: Choose 12 credit hours of Physics courses    |  | 12 |
| Total Credit Hours                                      |  | 20 |

## Department of Public Instruction Certification

To pursue Department of Public Instruction certification, College of Education students should complete the following requirements which consist of a total of 22 credit hours: one required physics sequence (8 credit hours), three required physics courses (9 credit hours) and 5 credit hours in physics elective courses as listed below:

|   |  |    |
|---|--|----|
| Required Physics Sequence: Choose one of the following: |  | 8  |
| PHYS 1001<br>& PHYS 1002                                | General Physics 1<br>and General Physics 2   |    |
| PHYS 1003<br>& PHYS 1004                                | General Physics with Introductory Calculus 1<br>and General Physics with Introductory Calculus 2 |    |
| PHYS 1013<br>& PHYS 1014                                | Classical and Modern Physics with Calculus 1<br>and Classical and Modern Physics with Calculus 2 |    |
| Required Physics Courses:                               |  |    |
| PHYS 1009   | Earth and Environmental Physics  | 3  |
| PHYS 2004   | Modern Physics: Atoms, Particles, and Quanta   | 3  |
| PHYS 2005   | Modern Physics: The States of Matter   | 3  |
| Electives: Choose 5 credit hours of Physics courses     |  | 5  |
| Total Credit Hours                                      |  | 22 |



## Minor in Astronomy

The Astronomy Minor is intended for students who are interested in learning about modern astronomy and astrophysics.

**NON-PHYSICS MAJORS:** the minor in astronomy requires one introductory physics sequences (8 credit hours) and four required physics courses (12 credit hours) for a total of 20 credit hours as listed below:

Required Physics Sequence: Choose one of the following: 8

|                          |  |
|--------------------------|--|
| PHYS 1001<br>& PHYS 1002 | General Physics 1<br>and General Physics 2   |
| PHYS 1003<br>& PHYS 1004 | General Physics with Introductory Calculus 1<br>and General Physics with Introductory Calculus 2 |
| PHYS 1013<br>& PHYS 1014 | Classical and Modern Physics with Calculus 1<br>and Classical and Modern Physics with Calculus 2 |

Required Physics Courses:

|                    |  |    |
|--------------------|--|----|
| PHYS 1008          | Astronomy and Space Physics                  | 3  |
| PHYS 2004          | Modern Physics: Atoms, Particles, and Quanta | 3  |
| PHYS 3021          | Introduction to Theoretical Astrophysics     | 3  |
| PHYS 3022          | Introduction to Observational Astronomy      | 3  |
| Total Credit Hours |  | 20 |

**Note:**

- Students who complete PHYS 1001 and PHYS 1002 must also take the math requisites for PHYS 1003 and PHYS 1004 (MATH 1450 and 1451) in order to meet the mathematics level of PHYS 3021 and PHYS 3022.

**PHYSICS MAJORS:** the minor in astronomy requires the following, taken under the guidance of one of our astronomy/astrophysics faculty with a topic being in the realm of astronomy or astrophysics. Note that the PHYS 4931 Topics in Contemporary Physics course is then used for the astronomy minor requirement and may not then be used for a physics major elective course requirement. The astronomy minor for a physics major requires a total of 12 credit hours beyond the physics major requirements.

Required Courses:

|                    |  |    |
|--------------------|--|----|
| PHYS 1008          | Astronomy and Space Physics              | 3  |
| PHYS 3021          | Introduction to Theoretical Astrophysics | 3  |
| PHYS 3022          | Introduction to Observational Astronomy  | 3  |
| PHYS 4931          | Topics in Contemporary Physics           | 3  |
| Total Credit Hours |  | 12 |

## Minor in Biophysics

Biophysics is concerned with the application of the concepts and methods of physics to the solution of biological problems and to the understanding of biological processes. Students who complete the biophysics minor achieve a grasp of physics as it relates to solving biological problems, a general understanding of the nature of biological problems and of proteins and cell membranes in particular and of several techniques based on physics principles that are used in biological investigations.

Additional cognate requirements for the minor are one year each of introductory biology, chemistry and physics and the following:

Introduction to Organic Chemistry - One of the following: 2-8

|                          |  |
|--------------------------|--|
| CHEM 2111<br>& CHEM 2112 | Organic Chemistry 1<br>and Organic Chemistry 2 |
|--------------------------|--|

or

|                          |  |
|--------------------------|--|
| CHEM 2113<br>& CHEM 2114 | Organic Chemistry for Majors 1<br>and Organic Chemistry for Majors 2 |
|--------------------------|--|

or

|           |   |
|-----------|---|
| BISC 2050 | Organic Chemistry for the Health Sciences |
|-----------|---|

Differential and Integral Calculus 3-4

|           |                                      |
|-----------|--------------------------------------|
| MATH 1410 | Calculus for the Biological Sciences |
|-----------|--------------------------------------|

or

|                          |                              |
|--------------------------|------------------------------|
| MATH 1450<br>& MATH 1451 | Calculus 1<br>and Calculus 2 |
|--------------------------|------------------------------|

Course requirements:

|           |  |   |
|-----------|--|---|
| PHYS 4046 | The Physical Basis of Biological Structure and Function (or equivalent by consent of Physics Dept) | 3 |
|-----------|--|---|

|           |  |   |
|-----------|--|---|
| PHYS 4065 | Experimental Methods in Molecular Biophysics | 3 |
|-----------|--|---|

|           |                    |   |
|-----------|--------------------|---|
| PHYS 3953 | Biophysics Seminar | 1 |
|-----------|--------------------|---|

|           |                        |     |
|-----------|------------------------|-----|
| PHYS 3995 | Undergraduate Research | 1-3 |
|-----------|------------------------|-----|

---

|                    |  |       |
|--------------------|--|-------|
| Total Credit Hours |  | 13-22 |
|--------------------|--|-------|

## Areas of Concentration

Students may use their electives to develop concentrations that prepare them for specific careers. These concentrations build on the foundation of the common physics core as well as the background course work in mathematics and chemistry. Students should refer to the requirements listed under **Major in Physics**. Students should also consult with their pre-professional adviser for specifics regarding the various medical and dental school admission requirements. Several possible concentrations are outlined below.

## Pre-medical/Pre-dental Concentration for Physics Majors

To pursue medical or dental professional studies, students should follow the pre-medical/pre-dental concentration or the physics in medicine concentration. The pre-medical/pre-dental concentration consists of the common physics core (22 credit hours in physics), background course work in mathematics (16 credit hours) and chemistry (8 credit hours), in addition to the courses listed below:

### Biology Courses:

|           |  |   |
|-----------|--|---|
| BIOL 1001 | General Biology 1                      | 3 |
| BIOL 1002 | General Biology 2                      | 3 |
| BIOL 2001 | Principles of Biological Investigation | 3 |

### Chemistry Courses:

|           |                                |   |
|-----------|--------------------------------|---|
| CHEM 2113 | Organic Chemistry for Majors 1 | 4 |
| CHEM 2114 | Organic Chemistry for Majors 2 | 4 |

|                    |    |
|--------------------|----|
| Total Credit Hours | 17 |
|--------------------|----|

## Typical Program for Physics Majors - Pre-medical/Pre-dental Concentration

| Freshman                  |       |                  |       |
|---------------------------|-------|------------------|-------|
| First Term                | Hours | Second Term      | Hours |
| BIOL 1001                 | 3     | BIOL 2001        | 3     |
| ENGL 1001                 | 3     | ENGL 1002        | 3     |
| MATH 1450                 | 4     | MATH 1451        | 4     |
| PHYS 1013                 | 4     | PHYS 1014        | 4     |
|                           |       | PHYS 1018        | 0     |
|                           | 14    |                  | 14    |
| Sophomore                 |       |                  |       |
| First Term                | Hours | Second Term      | Hours |
| CHEM 1001                 | 4     | BIOL 1002        | 3     |
| Foreign Language          | 3-4   | CHEM 1002        | 4     |
| MATH 2450                 | 4     | Foreign Language | 3-4   |
| PHYS 2004                 | 3     | MATH 2451        | 4     |
| Social-Behavioral Science | 3     | PHYS 2005        | 3     |
|                           | 17-18 |                  | 17-18 |

| <b>Junior</b>               |              |                                   |              |
|-----------------------------|--------------|-----------------------------------|--------------|
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>                | <b>Hours</b> |
| CHEM 2113                   | 4            | BIOL 4101*                        | 3            |
| HIST 1001 or 1002           | 3            | CHEM 2114                         | 4            |
| Literature                  | 3            | Physics elective                  | 3            |
| PHIL 1001                   | 3            | PHIL 2310                         | 3            |
| PHYS 3011                   | 3            | THEO 1001                         | 3            |
|                             | 16           |                                   | 16           |
| <b>Senior</b>               |              |                                   |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>                | <b>Hours</b> |
| Elective                    | 3            | Literature                        | 3            |
| Philosophy (upper division) | 3            | History/Social-Behavioral Science | 3            |
| PHYS 4031                   | 3            | Physics elective                  | 3            |
| PHYS 2055                   | 2            | Theology (third level)            | 3            |
| Physics elective            | 3            | Electives                         | 3            |
| Theology (second level)     | 3            | Diverse Cultures elective         | 3            |
|                             | 17           |                                   | 18           |
| Total credit hours: 129-131 |              |                                   |              |

## Physics in Medicine Concentration (Research)

The physics in medicine concentration, which is recommended for students interested in biomedical research, consists of the common physics core (22 credit hours in physics), background course work in mathematics (16 credit hours) and chemistry (8 credit hours), in addition to the courses listed below:

### Biology Courses:

|           |  |   |
|-----------|--|---|
| BIOL 1001 | General Biology 1                      | 3 |
| BIOL 1002 | General Biology 2                      | 3 |
| BIOL 2001 | Principles of Biological Investigation | 3 |

### Chemistry Courses:

|           |                                |   |
|-----------|--------------------------------|---|
| CHEM 2113 | Organic Chemistry for Majors 1 | 4 |
| CHEM 2114 | Organic Chemistry for Majors 2 | 4 |

### Mathematics Course:

|           |                     |   |
|-----------|---------------------|---|
| MATH 4720 | Statistical Methods | 3 |
|-----------|---------------------|---|

|                                   |                             |    |
|-----------------------------------|-----------------------------|----|
| Physics Course:                   |                             |    |
| PHYS 3953                         | Biophysics Seminar          | 1  |
| Physics electives should include: |                             |    |
| PHYS 4012                         | Quantum Mechanics           | 3  |
| PHYS 4032                         | Electricity and Magnetism 2 | 3  |
| Total Credit Hours                |                             | 27 |

## Typical Program for Physics Majors - Medicine Concentration

|                           |              |                        |              |
|---------------------------|--------------|------------------------|--------------|
| <b>Freshman</b>           |              |                        |              |
| <b>First Term</b>         | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |
| BIOL 1001                 | 3            | BIOL 2001              | 3            |
| ENGL 1001                 | 3            | ENGL 1002              | 3            |
| MATH 1450                 | 4            | MATH 1451              | 4            |
| PHYS 1013                 | 4            | PHYS 1014              | 4            |
|                           |              | PHYS 1018              | 0            |
|                           | 14           |                        | 14           |
| <b>Sophomore</b>          |              |                        |              |
| <b>First Term</b>         | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |
| CHEM 1001                 | 4            | BIOL 1002              | 3            |
| Foreign Language          | 3-4          | CHEM 1002              | 4            |
| MATH 2450                 | 4            | Foreign Language       | 3-4          |
| PHYS 2004                 | 3            | MATH 2451              | 4            |
| Social-Behavioral Science | 3            | PHYS 2005              | 3            |
|                           | 17-18        |                        | 17-18        |
| <b>Junior</b>             |              |                        |              |
| <b>First Term</b>         | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |
| CHEM 2113                 | 4            | BIOL 4101*             | 3            |
| HIST 1001 or 1002         | 3            | CHEM 2114              | 4            |
| Literature                | 3            | History/Social Science | 3            |
| PHIL 1001                 | 3            | PHIL 2310              | 3            |
| PHYS 3011                 | 3            | THEO 1001              | 3            |

|                             |              |                           |              |
|-----------------------------|--------------|---------------------------|--------------|
| Biophysics Seminar*         | 1            | Biophysics Seminar*       |              |
|                             | 17           |                           | 16           |
| <b>Senior</b>               |              |                           |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>        | <b>Hours</b> |
| Literature                  | 3            | Philosophy elective       | 3            |
| MATH 4720                   | 3            | PHYS 4012                 | 3            |
| PHYS 4031                   | 3            | PHYS 4032*                | 3            |
| PHYS 2055                   | 2            | Theology (third level)    | 3            |
| Theology (second level)     | 3            | Biophysics Seminar*       | 1            |
| Biophysics Seminar*         | 1            | Physics elective          | 2-3          |
| COSC-database*              | 3            | Diverse Cultures elective | 3            |
|                             | 18           |                           | 18-19        |
| Total credit hours: 131-134 |              |                           |              |

## Computational Physics Concentration

The computational physics concentration serves to develop competence in using the computer as a scientific tool. It consists of the common physics core (22 credit hours in physics), background course work in mathematics (16 credit hours) and chemistry (8 credit hours), in addition to the courses listed below:

Mathematics Course:

|           |                                  |   |
|-----------|----------------------------------|---|
| MATH 3100 | Linear Algebra and Matrix Theory | 3 |
|-----------|----------------------------------|---|

Computer Science Courses:

|  |                                      |   |
|--|--------------------------------------|---|
| COSC 1010                                    | Introduction to Computer Programming | 4 |
| COSC 1020                                    | Object-Oriented Software Design      | 4 |
| COSC 2100                                    | Data Structures and Algorithms 1     | 3 |
| COSC 2200                                    | Hardware Systems                     | 3 |
| And two additional upper-level COSC courses. |                                      | 6 |

One physics elective course:

|           |                       |   |
|-----------|-----------------------|---|
| PHYS 2049 | Computational Physics | 3 |
|-----------|-----------------------|---|

|                    |    |
|--------------------|----|
| Total Credit Hours | 26 |
|--------------------|----|

## Typical Program for Physics Majors - Computational Physics Concentration

| Freshman                    |       |                           |       |
|-----------------------------|-------|---------------------------|-------|
| First Term                  | Hours | Second Term               | Hours |
| ENGL 1001                   | 3     | ENGL 1002                 | 3     |
| Foreign Language            | 3-4   | Foreign Language          | 3-4   |
| MATH 1450                   | 4     | MATH 1451                 | 4     |
| PHYS 1013                   | 4     | PHYS 1014                 | 4     |
|                             |       | PHYS 1018                 | 0     |
|                             | 14-15 |                           | 14-15 |
| Sophomore                   |       |                           |       |
| First Term                  | Hours | Second Term               | Hours |
| COSC 1010                   | 4     | COSC 1020                 | 4     |
| HIST 1001 or 1002           | 3     | History/Social Science    | 3     |
| MATH 2450                   | 4     | MATH 2451                 | 4     |
| PHYS 2004                   | 3     | PHYS 2005                 | 3     |
| Elective                    | 3     | Elective                  | 3     |
|                             | 17    |                           | 17    |
| Junior                      |       |                           |       |
| First Term                  | Hours | Second Term               | Hours |
| COSC 2200                   | 3     | COSC 2100                 | 3     |
| PHIL 1001                   | 3     | PHIL 2310                 | 3     |
| MATH 3100                   | 3     | PHYS 3056                 | 2     |
| PHYS 3011                   | 3     | Literature                | 3     |
| PHYS 2055                   | 2     | Physics elective          | 3     |
| THEO 1001                   | 3     | Social-Behavioral Science | 3     |
|                             | 17    |                           | 17    |
| Senior                      |       |                           |       |
| First Term                  | Hours | Second Term               | Hours |
| MATH 4540                   | 3     | Computer Science elective | 3     |
| PHYS 4031                   | 3     | Literature                | 3     |
| Philosophy (upper division) | 3     | PHYS 2049                 | 3     |

|                             |    |                           |    |
|-----------------------------|----|---------------------------|----|
| Theology (second level)     | 3  | Physics elective          | 2  |
| Computer Science electives  | 6  | Theology (third level)    | 3  |
|                             |    | Diverse Cultures elective | 3  |
|                             | 18 |                           | 17 |
| Total credit hours: 131-133 |    |                           |    |

## Mathematical Physics Concentration

The mathematical physics concentration develops the mathematical aspects of physics. It consists of the common physics core (22 credit hours in physics), background course work in mathematics (16 credit hours) and chemistry (8 credit hours), in addition to the courses listed below:

Mathematics Courses:

|           |                                  |   |
|-----------|----------------------------------|---|
| MATH 3100 | Linear Algebra and Matrix Theory | 3 |
| MATH 4120 | Abstract Algebra 1               | 3 |
| MATH 4210 | Complex Variables                | 3 |

Two physics elective courses:

|           |                                |   |
|-----------|--------------------------------|---|
| PHYS 4012 | Quantum Mechanics              | 3 |
| PHYS 4062 | Introduction to Thermodynamics | 3 |

|                    |    |
|--------------------|----|
| Total Credit Hours | 15 |
|--------------------|----|

### Note:

- Students pursuing the computational physics or mathematical physics concentrations may request from the physics department a waiver of the CHEM 1001, 1002 requirements, to substitute additional COSC or MATH courses.



# Political Science

**Chairperson: Barrett L. McCormick, Ph.D.**

Department of Political Science website (<http://www.marquette.edu/polisci/>)

Studying politics offers a way to engage in some of the most critical issues of our troubled times. Our country's politics are deeply divided and our institutions suffer partisanship and gridlock. Our media, too, often substitutes hyperbole for reasonable discussion. Our economy is struggling amidst the turmoil of globalization. Meanwhile newly rising economies give other countries increasing power. We remain at war and also face new types of threats ranging from global environmental problems to terrorism. The political science department offers courses that engage these and other timely issues. Students can choose to specialize in world politics, law and politics, business and politics or general politics, drawing from courses in American politics, international politics, comparative politics and political philosophy. We offer hands-on experience in local internships and a semester in Washington D.C., at the Les Aspin Center. And our extensive alumni network can help start careers in fields as diverse as law, federal, state and local government, electoral politics, intelligence, business and international and domestic community service.

The major requires 33 credit hours of courses in any one of our four concentrations. Minors require 18 credit hours. Majors and minors are also offered for students in the College of Education pursuing a teaching specialization in political science. The accelerated five-year B.A./M.A. in political science and in international affairs attracts a wide variety of students.

## Major in Political Science

The major in political science consists of 33 credit hours of political science courses. Students must complete one of the four concentrations listed below, including 6 credit hours in major writing development classes.

### Notes:

- Students with more than one major must have at least fifteen credit hours of political science that are not counted for another major.
- Students may take up to 6 credit hours of POSC 4995 Independent Study in Political Science with department approval.
- The major writing development classes are specified in the Schedule of Classes each term.
- Students enrolled in the Les Aspin Washington Center for Government program may count a maximum of nine credit hours in political science taken in the program toward the major.

## Concentration I: Politics

### Concentration I: Politics

|           |                        |   |
|-----------|------------------------|---|
| POSC 2201 | American Politics      | 3 |
| POSC 2401 | Comparative Politics   | 3 |
| POSC 2601 | International Politics | 3 |
| POSC 2801 | Justice and Power      | 3 |

|  |    |
|--|----|
| Choose seven upper-division POSC courses at least three from Groups I-IV | 21 |
|--|----|

Recommended Major Courses:

|           |  |  |
|-----------|--|--|
| POSC 4191 | The Logic of Social Inquiry: The Kennedy Assassination |  |
|-----------|--|--|

|           |                                 |  |
|-----------|---------------------------------|--|
| POSC 4986 | Internship in Political Science |  |
|-----------|---------------------------------|--|

Writing Development: Two courses (can include any used above)

Recommended cognate courses:

|           |                              |  |
|-----------|------------------------------|--|
| ECON 2003 | Principles of Microeconomics |  |
|-----------|------------------------------|--|

|           |                              |  |
|-----------|------------------------------|--|
| ECON 2004 | Principles of Macroeconomics |  |
|-----------|------------------------------|--|

|           |                      |  |
|-----------|----------------------|--|
| ENGL 3210 | Advanced Composition |  |
|-----------|----------------------|--|

|           |                    |  |
|-----------|--------------------|--|
| MATH 1390 | Finite Mathematics |  |
|-----------|--------------------|--|

|           |                        |  |
|-----------|------------------------|--|
| MATH 1400 | Elements of Calculus 1 |  |
|-----------|------------------------|--|

Foreign Language: Any foreign language 3001 or 3100

|                    |    |
|--------------------|----|
| Total Credit Hours | 33 |
|--------------------|----|

## Concentration II: Law and Politics

Concentration II: Law and Politics

|           |                   |   |
|-----------|-------------------|---|
| POSC 2201 | American Politics | 3 |
|-----------|-------------------|---|

|           |                      |   |
|-----------|----------------------|---|
| POSC 2401 | Comparative Politics | 3 |
|-----------|----------------------|---|

|              |                        |  |
|--------------|------------------------|--|
| or POSC 2601 | International Politics |  |
|--------------|------------------------|--|

|           |                   |   |
|-----------|-------------------|---|
| POSC 2801 | Justice and Power | 3 |
|-----------|-------------------|---|

Choose eight additional POSC courses as listed below:

|           |                        |   |
|-----------|------------------------|---|
| POSC 4216 | American Public Policy | 3 |
|-----------|------------------------|---|

|              |                                   |  |
|--------------|-----------------------------------|--|
| or POSC 4376 | American National Security Policy |  |
|--------------|-----------------------------------|--|

|           |   |   |
|-----------|---|---|
| POSC 4241 | Constitutional Law: Separation of Powers, Federalism and Rights | 3 |
|-----------|---|---|

|           |                            |   |
|-----------|----------------------------|---|
| POSC 4251 | Civil Liberties and Rights | 3 |
|-----------|----------------------------|---|

|           |                   |   |
|-----------|-------------------|---|
| POSC 4601 | International Law | 3 |
|-----------|-------------------|---|

|  |   |
|--|---|
| Group I: Choose one additional course from Group I | 3 |
|--|---|

|  |   |
|--|---|
| Group IV: Choose one additional course from Group IV | 3 |
|--|---|

|   |   |
|---|---|
| Additional POSC Elective Courses: Choose two POSC courses | 6 |
|---|---|

Recommended Major Courses:

|           |  |  |
|-----------|--|--|
| POSC 4191 | The Logic of Social Inquiry: The Kennedy Assassination |  |
|-----------|--|--|

|           |                          |
|-----------|--------------------------|
| POSC 4195 | Politics of the Internet |
|-----------|--------------------------|

|           |  |
|-----------|--|
| POSC 4641 | Politics of the Illicit Global Economy |
|-----------|--|

|           |                                 |
|-----------|---------------------------------|
| POSC 4986 | Internship in Political Science |
|-----------|---------------------------------|

Writing Development Courses: Two courses (can include any used above)

Recommended cognate courses:

|           |                              |
|-----------|------------------------------|
| ECON 2003 | Principles of Microeconomics |
|-----------|------------------------------|

|           |                              |
|-----------|------------------------------|
| ECON 2004 | Principles of Macroeconomics |
|-----------|------------------------------|

|           |                      |
|-----------|----------------------|
| ENGL 3210 | Advanced Composition |
|-----------|----------------------|

|           |                        |
|-----------|------------------------|
| MATH 1400 | Elements of Calculus 1 |
|-----------|------------------------|

---

|                    |    |
|--------------------|----|
| Total Credit Hours | 33 |
|--------------------|----|

### Concentration III: Global Politics

Concentration III: Global Politics

|           |                   |   |
|-----------|-------------------|---|
| POSC 2201 | American Politics | 3 |
|-----------|-------------------|---|

|           |                      |   |
|-----------|----------------------|---|
| POSC 2401 | Comparative Politics | 3 |
|-----------|----------------------|---|

|           |                        |   |
|-----------|------------------------|---|
| POSC 2601 | International Politics | 3 |
|-----------|------------------------|---|

Choose eight additional POSC courses as listed below:

|           |                   |   |
|-----------|-------------------|---|
| POSC 4601 | International Law | 3 |
|-----------|-------------------|---|

|              |                            |  |
|--------------|----------------------------|--|
| or POSC 4611 | International Organization |  |
|--------------|----------------------------|--|

|           |                               |   |
|-----------|-------------------------------|---|
| POSC 4621 | Politics of the World Economy | 3 |
|-----------|-------------------------------|---|

|              |                             |  |
|--------------|-----------------------------|--|
| or POSC 4631 | World Conflict and Security |  |
|--------------|-----------------------------|--|

|              |                                      |  |
|--------------|--------------------------------------|--|
| or POSC 4661 | The Political Economy of Development |  |
|--------------|--------------------------------------|--|

|                                      |   |
|--------------------------------------|---|
| Choose one of the following courses: | 3 |
|--------------------------------------|---|

|           |  |
|-----------|--|
| POSC 4641 | Politics of the Illicit Global Economy |
|-----------|--|

|           |                              |
|-----------|------------------------------|
| POSC 4701 | United States Foreign Policy |
|-----------|------------------------------|

|           |                                  |
|-----------|----------------------------------|
| POSC 4711 | International Politics of Europe |
|-----------|----------------------------------|

|           |   |
|-----------|---|
| POSC 4721 | International Politics of the Middle East |
|-----------|---|

|           |                                |
|-----------|--------------------------------|
| POSC 4731 | International Politics of Asia |
|-----------|--------------------------------|

|           |  |
|-----------|--|
| POSC 4741 | United States-Latin American Relations |
|-----------|--|

Choose one of the following courses: 3

POSC 4201 The United States Congress

POSC 4211 The American Presidency

POSC 4216 American Public Policy

POSC 4376 American National Security Policy

Group II: Choose two additional courses from Group II 6

Additional POSC elective courses: Choose two POSC Courses 6

Recommended Major Courses:

POSC 2801 Justice and Power

Groups II and III: one additional upper-division course

Writing Development Courses: Choose two courses (can include any used above)

Recommended cognate courses:

ECON 2003 Principles of Microeconomics

ECON 2004 Principles of Macroeconomics

Foreign Language: Third year level (3000)

---

Total Credit Hours 33

## Concentration IV: Business and Politics

Concentration IV: Business and Politics

POSC 2201 American Politics 3

Choose two of the following courses: 6

POSC 2401 Comparative Politics

POSC 2601 International Politics

POSC 2801 Justice and Power

Choose eight additional POSC courses as listed below:

POSC 4321 Business and Politics 3

Choose two of the following courses: 6

POSC 4411 Politics, Economics, and Democracy

POSC 4621 Politics of the World Economy

POSC 4861 The Political Philosophy of Capitalism

Choose three of the following courses:

9

|           |   |
|-----------|---|
| POSC 4216 | American Public Policy                  |
| POSC 4231 | Political Organizations                 |
| POSC 4281 | Urban Public Policy                     |
| POSC 4331 | Politics and Regulation                 |
| POSC 4341 | Politics of American Capitalism         |
| POSC 4406 | Public Policy in Industrial Democracies |
| POSC 4641 | Politics of the Illicit Global Economy  |
| POSC 4851 | Karl Marx                               |
| POSC 4986 | Internship in Political Science         |

Choose two other POSC elective courses from any Group

6

Writing Development Courses: Two courses (can include any used above)

Required cognate courses:

|           |                              |
|-----------|------------------------------|
| ECON 2003 | Principles of Microeconomics |
| ECON 2004 | Principles of Macroeconomics |

Total Credit Hours

33

**Standard course numbering for the various groups referred to in the requirements:****Group I:** American Politics: POSC 2201, 4201-4376**Group II:** Comparative Politics: POSC 2401, 4406-4561**Group III:** International Politics: POSC 2601, 4601-4741**Group IV:** Political Theory: POSC 2801, 4801-4881

## Minor in Political Science

The minor in political science consists of six courses (18 credit hours): four required courses (12 credit hours) and two elective courses (6 credit hours) as listed below:

Required Courses:

|           |                        |   |
|-----------|------------------------|---|
| POSC 2201 | American Politics      | 3 |
| POSC 2401 | Comparative Politics   | 3 |
| POSC 2601 | International Politics | 3 |
| POSC 2801 | Justice and Power      | 3 |

|   |    |
|---|----|
| Electives: Choose two additional POSC courses | 6  |
| Total Credit Hours                            | 18 |

## Department of Public Instruction Certification - Political Science Minor

College of Education students wishing to pursue Department of Public Instruction Certification must complete eight courses (24 credit hours): four required courses (12 credit hours) and four upper-division elective courses (12 credit hours) from Group I-IV as listed below:

Required Courses:

|   |                        |    |
|---|------------------------|----|
| POSC 2201                                   | American Politics      | 3  |
| POSC 2401                                   | Comparative Politics   | 3  |
| POSC 2601                                   | International Politics | 3  |
| POSC 2801                                   | Justice and Power      | 3  |
| Group I: Choose one upper-division course   |                        | 3  |
| Group II: Choose one upper-division course  |                        | 3  |
| Group III: Choose one upper-division course |                        | 3  |
| Group IV: Choose one upper-division course  |                        | 3  |
| Total Credit Hours                          |                        | 24 |

## 5-Year B.A./M.A. Program

The Political Science Department offers a five-year B.A./M.A. in Political Science and International Affairs. Students admitted to this program, may count a number of courses taken during their senior year toward both the B.A. and the M.A. degrees. This enables a student to complete both a B.A. and a M.A. in five years instead of the six that would normally be required.

The M.A. programs in political science offer courses that can take a student far beyond the undergraduate level. Those who have completed our M.A. degree have gone on to some of the finest graduate schools, launched careers in a variety of government agencies and gained employment in various settings in the private sector.

Graduate courses in our program offer students the possibility to pursue topics of interest to them in more depth than they are able to in undergraduate classes. These courses couple smaller class sizes and more opportunities for participation with an emphasis on the refinement of student research skills.

## Department of Public Instruction Certification - Political Science Major

College of Education students pursuing Department of Public Instruction Certification should note that persons holding Wisconsin's Broad Field Social Studies license will be qualified to teach political science, if they complete 9 credit hours in political science.

Students pursuing certification with a political science major must complete 33 credit hours of political science courses as specified in Concentration I, with the exception that they should complete one upper-division course in all four of the groups listed. It is important that prospective teachers carefully review the College of Education section of this bulletin and consult with their Political Science Department adviser regarding university and state requirements (in addition to department requirements) for teacher certification.

#### Concentration I: Politics

|           |                        |   |
|-----------|------------------------|---|
| POSC 2201 | American Politics      | 3 |
| POSC 2401 | Comparative Politics   | 3 |
| POSC 2601 | International Politics | 3 |
| POSC 2801 | Justice and Power      | 3 |

|   |    |
|---|----|
| Choose seven upper-division POSC courses as listed below: | 21 |
|---|----|

Group I: Choose at least one course

Group II: Choose at least one course

Group III: Choose at least one course

Group IV: Choose at least one course

Choose three upper-division elective courses

#### Recommended Major Courses:

|           |  |
|-----------|--|
| POSC 4191 | The Logic of Social Inquiry: The Kennedy Assassination |
|-----------|--|

|           |                                 |
|-----------|---------------------------------|
| POSC 4986 | Internship in Political Science |
|-----------|---------------------------------|

Writing Development: Two courses (can include any used above)

#### Recommended cognate courses:

|           |                              |
|-----------|------------------------------|
| ECON 2003 | Principles of Microeconomics |
|-----------|------------------------------|

|           |                              |
|-----------|------------------------------|
| ECON 2004 | Principles of Macroeconomics |
|-----------|------------------------------|

|           |                      |
|-----------|----------------------|
| ENGL 3210 | Advanced Composition |
|-----------|----------------------|

|           |                    |
|-----------|--------------------|
| MATH 1390 | Finite Mathematics |
|-----------|--------------------|

|           |                        |
|-----------|------------------------|
| MATH 1400 | Elements of Calculus 1 |
|-----------|------------------------|

Foreign Language: Any foreign language 3001 or 3100 level

|                    |    |
|--------------------|----|
| Total Credit Hours | 33 |
|--------------------|----|

# Psychology

**Chairperson: John H. Grych, Ph.D.**

Department of Psychology website (<http://www.marquette.edu/psyc/>)

Psychology is the science that studies behavior, emotions and mental processes. Psychologists use scientific methods in an attempt to understand and change, if necessary, the way that people think, feel and behave. The Department of Psychology at Marquette University trains both undergraduate and graduate students.

There are many types of psychologists. Developmental psychologists study how people behave and change throughout life. Social psychologists are concerned with the effects of social situations on human behavior. Personality psychologists study individual differences in how people behave. Neuropsychologists study the effects of brain damage, disorder or disease on behavioral and brain function. Biological psychologists and Neuroscientists are concerned with the biological bases of behavior. Cognitive psychologists investigate memory, thought, problem solving, and the psychological aspects of learning. Clinical psychologists study ways to help individuals, couples, families and groups change problematic behavior. Industrial psychologists study the effects of the physical and social aspects of people's work environments on productivity and business. The department takes pride in having nationally recognized scholars in all of these areas. All faculty teach undergraduate courses and are involved in graduate student training.

## Major in Psychology

The major in psychology consists of a total of 35 credit hours divided as follows: three required courses (11 credit hours), one course from each of the five psychology content areas (15 credit hours) and three elective psychology courses, two of which must be upper-division (9 credit hours).

Required Courses:

|           |  |   |
|-----------|--|---|
| PSYC 1001 | General Psychology                         | 3 |
| PSYC 2001 | Psychological Measurements and Statistics  | 4 |
| PSYC 2050 | Research Methods and Designs in Psychology | 4 |

Content Areas: Choose one upper-division course from each content area:

Developmental Psychology - Choose one of the following courses:

|              |  |   |
|--------------|--|---|
| PSYC 3101    | Developmental Psychology: Conception Through Adolescence | 3 |
| or PSYC 3120 | Developmental Psychology: Adulthood and Aging            |   |

Social Psychology - Choose one of the following courses:

|              |  |   |
|--------------|--|---|
| PSYC 3201    | Introductory Social Psychology         | 3 |
| or PSYC 3230 | Business and Organizational Psychology |   |

Cognitive Psychology - Choose one of the following courses:

|              |                           |   |
|--------------|---------------------------|---|
| PSYC 3301    | Learning and Behavior     | 3 |
| or PSYC 3320 | Cognition                 |   |
| or PSYC 4330 | Human Factors Engineering |   |



|  |                         |    |
|--|-------------------------|----|
| Clinical Psychology - Choose one of the following courses:                         |                         |    |
| PSYC 3401  | Abnormal Psychology     | 3  |
| or PSYC 3501   | Theories of Personality |    |
| Biological Psychology - Required course:   |                         |    |
| PSYC 3601  | Biopsychology           | 3  |
| Elective Courses - Choose three PSYC courses, two of which must be upper-division: |                         | 9  |
| Total Credit Hours   |                         | 35 |

## Department of Public Instruction Certification - Elementary/Middle School Education

College of Education students majoring in Elementary/Middle School Education majors who wish to pursue a second major in psychology must complete a total of 35 credit hours divided as follows: three required courses (11 credit hours), one course from each of the five psychology content areas (15 credit hours) and three elective psychology courses (9 credit hours), two of which must be upper-division courses, as listed below.

### Required Courses:

|           |  |   |
|-----------|--|---|
| PSYC 1001 | General Psychology                         | 3 |
| PSYC 2001 | Psychological Measurements and Statistics  | 4 |
| PSYC 2050 | Research Methods and Designs in Psychology | 4 |

Content Areas: Choose one course from each area as listed below:

|  |  |   |
|--|--|---|
| Developmental Psychology: Required Course                  |  |   |
| PSYC 3101  | Developmental Psychology: Conception Through Adolescence | 3 |
| Social Psychology: Choose one of the following courses:    |  |   |
| PSYC 3201  | Introductory Social Psychology                           | 3 |
| or PSYC 3230   | Business and Organizational Psychology                   |   |
| Cognitive Psychology: Choose one of the following courses: |  |   |
| PSYC 3301  | Learning and Behavior                                    | 3 |
| or PSYC 3320   | Cognition  |   |
| or PSYC 4330   | Human Factors Engineering                                |   |
| Clinical Psychology - Choose one of the following courses: |  |   |
| PSYC 3401  | Abnormal Psychology                                      | 3 |
| or PSYC 3501   | Theories of Personality                                  |   |
| Biological Psychology - Required Course                    |  |   |

|  |               |    |
|--|---------------|----|
| PSYC 3601  | Biopsychology | 3  |
| Elective Courses: Choose three PSYC courses, two of which must be upper-division |               | 9  |
| Total Credit Hours   |               | 35 |

**Notes:**

- PSYC 3101 Developmental Psychology: Conception Through Adolescence may be taken instead of EDUC 1220 Psychology of Human Development in Children and Adolescents in a Diverse Society.
- EDUC 4217 Children and Youth with Exceptional Needs may be taken as an elective in the major as an equivalent of PSYC 3130 The Psychology of the Exceptional Child for Education primary majors only.

## Department of Public Instruction Certification - Middle/Secondary Education

College of Education students majoring in Middle/Secondary School Education who wish to pursue a second major in psychology must complete a total of 35 credit hours divided as follows: three required courses (11 credit hours), one course from each of the five psychology content areas (15 credit hours) and three elective psychology courses (9 credit hours), two of which must be upper-division courses, as listed below.

## Required Courses:

|           |  |   |
|-----------|--|---|
| PSYC 1001 | General Psychology                         | 3 |
| PSYC 2001 | Psychological Measurements and Statistics  | 4 |
| PSYC 2050 | Research Methods and Designs in Psychology | 4 |

Content Areas - Choose one course from each of the areas listed below:

## Developmental Psychology - Required Course:

|           |  |   |
|-----------|--|---|
| PSYC 3101 | Developmental Psychology: Conception Through Adolescence | 3 |
|-----------|--|---|

## Social Psychology - Required Course:

|           |                                |   |
|-----------|--------------------------------|---|
| PSYC 3201 | Introductory Social Psychology | 3 |
|-----------|--------------------------------|---|

## Cognitive Psychology - Choose one of the following courses:

|           |                       |   |
|-----------|-----------------------|---|
| PSYC 3301 | Learning and Behavior | 3 |
|-----------|-----------------------|---|

or PSYC 3320 Cognition

## Clinical Psychology - Required course:

|           |                         |   |
|-----------|-------------------------|---|
| PSYC 3501 | Theories of Personality | 3 |
|-----------|-------------------------|---|

## Biological Psychology - Required course:

|           |               |   |
|-----------|---------------|---|
| PSYC 3601 | Biopsychology | 3 |
|-----------|---------------|---|

|  |    |
|--|----|
| Elective Courses: Choose three PSYC courses, two of which must be upper-division | 9  |
| Total Credit Hours   | 35 |

**Notes:**

- PSYC 3101 Developmental Psychology: Conception Through Adolescence may be taken instead of EDUC 1220 Psychology of Human Development in Children and Adolescents in a Diverse Society.
- EDUC 4217 Children and Youth with Exceptional Needs may be taken as an elective in the major as an equivalent of PSYC 3130 The Psychology of the Exceptional Child for Education primary majors only.

## Psychology Major for Nursing Students

College of Nursing students who wish to pursue a second major in psychology must complete a total of 35 credit hours divided as follows: three required courses (11 credit hours), one upper-division course except where specified from each of the five psychology content areas (15 credit hours) and three elective psychology courses (9 credit hours), two of which must be upper-division courses, as listed below.

**Required Courses:**

|           |  |   |
|-----------|--|---|
| PSYC 1001 | General Psychology                         | 3 |
| PSYC 2001 | Psychological Measurements and Statistics  | 4 |
| PSYC 2050 | Research Methods and Designs in Psychology | 4 |

Content Areas - Choose one course for each of the following:

**Developmental Psychology - Required Course:**

|           |   |   |
|-----------|---|---|
| PSYC 2101 | Introduction to Life-Span Developmental Psychology for Nursing Students | 3 |
|-----------|---|---|

**Social Psychology - Choose one of the following courses:**

|              |  |   |
|--------------|--|---|
| PSYC 3201    | Introductory Social Psychology         | 3 |
| or PSYC 3230 | Business and Organizational Psychology |   |

**Cognitive Psychology - Choose one of the following courses:**

|              |                           |   |
|--------------|---------------------------|---|
| PSYC 3301    | Learning and Behavior     | 3 |
| or PSYC 3320 | Cognition                 |   |
| or PSYC 4330 | Human Factors Engineering |   |

**Clinical Psychology - Required Course:**

|           |                               |   |
|-----------|-------------------------------|---|
| NURS 3500 | Mental Health Nursing--Theory | 3 |
|-----------|-------------------------------|---|

**Biological Psychology - Required Course:**

|           |               |   |
|-----------|---------------|---|
| PSYC 3601 | Biopsychology | 3 |
|-----------|---------------|---|

|  |    |
|--|----|
| Elective courses - Choose three PSYC courses, two of which must be upper-division: | 9  |
| Total Credit Hours   | 35 |

**Notes:**

- NURS 3500 Mental Health Nursing--Theory serves as the equivalent of PSYC 3401 Abnormal Psychology.
- NURS 3501 Mental Health Nursing--Practicum may be taken as an elective in the major as an equivalent of PSYC 4964 Field Experience in Psychology.

## Minor in Psychology

The minor in psychology consists of six courses (18 credit hours), including one required course (3 credit hours) and five elective PSYC courses (15 credit hours), three of which must be upper-division courses, as listed below.

Required Course:

|   |                    |    |
|---|--------------------|----|
| PSYC 1001   | General Psychology | 3  |
| Elective Courses: Choose five PSYC courses, three of which must be upper-division |                    | 15 |
| Total Credit Hours  |                    | 18 |

## Department of Public Instruction Certification - Minor in Psychology

College of Education students pursuing Department of Public Instruction certification must complete seven required courses (23 credit hours) and one upper-division elective course (3 credit hours) for a total of 26 credit hours, as listed below.

Required Courses:

|   |  |    |
|---|--|----|
| PSYC 1001                                       | General Psychology                                       | 3  |
| PSYC 2001                                       | Psychological Measurements and Statistics                | 4  |
| PSYC 2050                                       | Research Methods and Designs in Psychology               | 4  |
| PSYC 3101                                       | Developmental Psychology: Conception Through Adolescence | 3  |
| PSYC 3201                                       | Introductory Social Psychology                           | 3  |
| PSYC 3501                                       | Theories of Personality                                  | 3  |
| PSYC 4801                                       | History and Systems of Psychology                        | 3  |
| Elective: Choose one upper-division PSYC course |  | 3  |
| Total Credit Hours                              |  | 26 |

## Reserve Officers' Training Corps Minors

There are three Reserve Officers' Training Corps (ROTC) programs at Marquette University - Air Force (AFROTC), Army (AROTC) and Navy (NROTC). Each program prepares students for military commissioning, as well as offers a minor that students may choose to complete.

For more detailed information about each of the ROTC programs, see the Reserve Officers' Training Corps Programs (p. 44) section of this bulletin.

## Air Force Aerospace Studies

**Chairperson: Robert Hassler, Lt. Col**

Department of Air Force ROTC website (<http://www.marquette.edu/rotc/airforce/>)

AFAS courses are available to all Marquette University students, and especially intended for those enrolled in the Air Force ROTC Program.

For information on the Air Force Reserve Officer Training Corps Commissioning program see Reserve Officers' Training Corps (p. 44) in the university section of this bulletin.

**Note:**

- AFROTC students should note that most programs will probably entail more than the 128 hours normally required for graduation.

## Minor in Air Force Aerospace Studies

The minor in air force aerospace studies consists of 22-23 credit hours: 16 credit hours of required AFAS courses, and an additional 6 credit hours in POSC, MISL and NASC courses to obtain breadth of knowledge and a basis for understanding Joint Military Doctrine as listed below.

Required Courses:

|           |   |   |
|-----------|---|---|
| AFAS 1011 | Foundations of the Air Force 1                          | 1 |
| AFAS 1012 | Foundations of the Air Force 2                          | 1 |
| AFAS 2021 | Evolution of the Air Force/Air and Space Power 1        | 1 |
| AFAS 2022 | Evolution of the Air Force/Air and Space Power 2        | 1 |
| AFAS 3131 | Air Force Leadership Studies 1                          | 3 |
| AFAS 3132 | Air Force Leadership Studies 2                          | 3 |
| AFAS 4141 | National Security Affairs/Preparation for Active Duty 1 | 3 |
| AFAS 4142 | National Security Affairs/Preparation for Active Duty 2 | 3 |

\*The following course must be taken each term:

|           |                       |   |
|-----------|-----------------------|---|
| AFAS 1051 | Leadership Laboratory | 0 |
|-----------|-----------------------|---|

Additional Courses - Choose one from each of the following: 6-7

Political Science

|           |                                   |
|-----------|-----------------------------------|
| POSC 4201 | The United States Congress        |
| POSC 4376 | American National Security Policy |

Military Science/Army

|           |                            |
|-----------|----------------------------|
| MISL 1100 | Foundations of Officership |
| MISL 1200 | Basic Leadership           |

## Naval Science/Navy

|           |                                |
|-----------|--------------------------------|
| NASC 1009 | Introduction to Naval Science  |
| NASC 1022 | Sea Power and Maritime Affairs |

---

Total Credit Hours

22-23

**Notes:**

- Students need to complete the Air Force required field training (usually taken between sophomore and junior year) before taking the Army and Navy courses.
- \*Only those students pursuing a commission need to enroll in AFAS 1051 Leadership Laboratory each semester.

## Military Science and Leadership (MISL)

**Chairperson: Robert Kaderavek, Lt. Col.**

Department of Army ROTC website (<http://www.marquette.edu/rotc/army/>)

The Department of Military Science and Leadership (Army ROTC) was established under the auspices of the Klingler College of Arts and Sciences at Marquette University in 1951. Army ROTC (AROTC) is a leadership development program consisting of three interconnected components: 1) on-campus training, 2) off-campus training and 3) the Leadership Development Program (LDP). By design, the three components provide seamless, progressive and sequential leader development and prepare men and women to receive commissions as second lieutenants in the U.S. Army, Army National Guard or the U.S. Army Reserve.

For more information see the Reserve Officers' Training Corps (p. 45) section of this bulletin.

### Minor in Military Science and Leadership

The minor in military science and leadership consists of 27 credit hours of MISL courses as listed below.

|              |  |   |
|--------------|--|---|
| MISL 1001    | Military Physical Training Laboratory 1                                  | 1 |
| MISL 1002    | Military Physical Training Laboratory 2                                  | 1 |
| MISL 2001    | Military Physical Training Laboratory 3                                  | 1 |
| MISL 2002    | Military Physical Training Laboratory 4                                  | 1 |
| MISL 3001    | Military Physical Training Laboratory 5                                  | 1 |
| MISL 3002    | Military Physical Training Laboratory 6                                  | 1 |
| MISL 4001    | Military Physical Training Laboratory 7                                  | 1 |
| MISL 4002    | Military Physical Training Laboratory 8                                  | 1 |
| MISL 1100    | Foundations of Officership   | 1 |
| MISL 1200    | Basic Leadership   | 1 |
| MISL 1800    | American Crucible: The Military and the Development of the United States | 3 |
| or HIST 3118 | American Military History  |   |
| MISL 2100    | Individual Leadership Studies  | 2 |
| MISL 2200    | Leadership and Teamwork  | 2 |
| MISL 3100    | Leadership and Problem Solving   | 2 |
| MISL 3101    | Applied Leadership Laboratory 1  | 1 |
| MISL 3200    | Leadership and Ethics  | 2 |
| MISL 3202    | Applied Leadership Laboratory 2  | 1 |
| MISL 4100    | Officership  | 2 |



|                    |                                  |    |
|--------------------|----------------------------------|----|
| MISL 4101          | Advanced Leadership Laboratory 1 | 0  |
| MISL 4200          | Leadership and Management        | 2  |
| MISL 4202          | Advanced Leadership Laboratory 2 | 0  |
| Total Credit Hours |                                  | 27 |

**Notes:**

- The required history for senior AROTC students is HIST 3118 American Military History or MISL 1800 American Crucible: The Military and the Development of the United States, offered fall and spring terms.
- Army Reserve Officers' Training Corps students should note that when most majors are combined with the Military Science and Leadership program, graduation and commissioning requirements will exceed the 128–134 semester hours normally required for graduation.

## Naval Science

**Chairperson: Joseph Bauknecht, CAPT, USN**

Department of Navy ROTC website (<http://www.marquette.edu/rotc/navy/>)

The Marquette University Department of Naval Science offers a naval science minor area of study for undergraduate students interested in pursuing a commission as an officer in the United States Navy or Marine Corps. The primary purpose of this minor is to teach prospective Naval and Marine Corps Officers the history of the Navy, current naval affairs, maritime strategy and the evolution of that strategy throughout the Navy and Marine Corps, operations and functions of current naval vessels, as well as a strong and continuing emphasis on leadership and moral decision making throughout every one of the classes. The course work will provide students with the opportunity to acquire sound judgment, leadership, historical knowledge and current naval functions which are essential in becoming an officer in the Navy and Marine Corps.

## Minor in Naval Science

The minor in naval science consists of a minimum of 21-23 credit hours of Naval Science courses from the following:

Naval Science Courses:

|                    |   |    |
|--------------------|---|----|
| NASC 1009          | Introduction to Naval Science                   | 2  |
| NASC 1022          | Sea Power and Maritime Affairs                  | 3  |
| NASC 1142          | Naval Ship Systems 1                            | 3  |
| NASC 1151          | Navigation and Naval Operations 1               | 3  |
| NASC 1185          | Leadership and Management                       | 3  |
| NASC 2152          | Navigation and Naval Operations 2               | 3  |
| NASC 2162          | Naval Ship Systems 2                            | 3  |
| NASC 2186          | Leadership and Core-Value-Based Decision-Making | 3  |
| or NASC 4995       | Independent Study in Naval Sciences             |    |
| Total Credit Hours |   | 23 |

### Marine Option:

Students are required to complete 21 credit hours in NASC courses, as listed below.

Required Courses:

|           |                                |   |
|-----------|--------------------------------|---|
| NASC 1009 | Introduction to Naval Science  | 2 |
| NASC 1022 | Sea Power and Maritime Affairs | 3 |
| NASC 1161 | Evolution of the Art of War    | 3 |
| NASC 1181 | Amphibious Warfare             | 3 |
| NASC 1185 | Leadership and Management      | 3 |

|                    |  |    |
|--------------------|--|----|
| NASC 2186          | Leadership and Core-Value-Based Decision-Making          | 3  |
| or NASC 4995       | Independent Study in Naval Sciences                      |    |
| NASC 2964          | Practicum in U.S. Marine Corps Leadership and Management | 4  |
| Total Credit Hours |  | 21 |

## Additional Requirements for Navy Option Scholarship Students:

## Calculus - Must complete by end of sophomore year:

|                          |                              |   |
|--------------------------|------------------------------|---|
| MATH 1450<br>& MATH 1451 | Calculus 1<br>and Calculus 2 | 8 |
|--------------------------|------------------------------|---|

## Physics - Must complete by end of junior year:

|                          |  |   |
|--------------------------|--|---|
| PHYS 1003<br>& PHYS 1004 | General Physics with Introductory Calculus 1<br>and General Physics with Introductory Calculus 2 | 8 |
|--------------------------|--|---|

## History or Political Science Course - Choose one of the following:

|              |                                   |   |
|--------------|-----------------------------------|---|
| HIST 3118    | American Military History         | 3 |
| or POSC 4376 | American National Security Policy |   |

|                                     |   |
|-------------------------------------|---|
| English - Must complete two courses | 6 |
|-------------------------------------|---|

|   |   |
|---|---|
| *World Culture Courses - Choose one of the following courses: | 3 |
|---|---|

## History Courses:

|           |   |
|-----------|---|
| HIST 1301 | Survey of Latin America   |
| HIST 1401 | Africa  |
| HIST 1501 | East Asia   |
| HIST 3455 | Modern Middle East Since 1500   |
| HIST 4450 | North Africa  |
| HIST 4500 | Modern Japan  |
| HIST 4555 | Modern China  |
| HIST 4931 | Topics in History (if relevant to Third World and/or Middle Eastern cultures) |

## Political Science Courses:

|           |   |
|-----------|---|
| POSC 4521 | Chinese Politics                          |
| POSC 4531 | Japanese and Korean Politics              |
| POSC 4561 | Politics of the Developing World          |
| POSC 4721 | International Politics of the Middle East |

|           |                                |
|-----------|--------------------------------|
| POSC 4731 | International Politics of Asia |
|-----------|--------------------------------|

Theology Courses:

|           |                             |
|-----------|-----------------------------|
| THEO 4520 | Jewish Thought and Practice |
|-----------|-----------------------------|

|           |                           |
|-----------|---------------------------|
| THEO 4530 | Islam: Faith and Practice |
|-----------|---------------------------|

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Total Credit Hours

28

**Notes:**

- NROTC students should note that most programs will probably entail more than the 128 credit hours normally required for graduation.
- Core and major requirements may dictate which combination of calculus courses must be taken.
- \*Other world culture courses must be approved by NROTC.
- To be competitive for selection for a scholarship, non-scholarship students should plan on completing two terms of calculus: MATH 1450 Calculus 1 and MATH 1451 Calculus 2 by the end of the freshman year and two terms of physics: PHYS 1003 General Physics with Introductory Calculus 1 and PHYS 1004 General Physics with Introductory Calculus 2 by the end of the sophomore year. For specific details, contact the professor of Naval Science.

## Social and Cultural Sciences

**Chairperson: Roberta L. Coles, Ph.D.**

Department of Social and Cultural Sciences website (<http://www.marquette.edu/socs/>)

The Department of Social and Cultural Sciences is a multidisciplinary department, offering four social science majors: Anthropology (ANTH), Criminology and Law Studies (CRLS), Sociology (SOCL) and Social Welfare and Justice (SOWJ). A degree in any one or more of our majors equips students with a broad liberal arts perspective as well as specific skills and areas of knowledge about individual and societal behaviors, interactions and processes, values and social institutions and important socio-economic and socio-political issues of the day.

Because the social sciences are so integral to a quality education that prepares you for a fulfilling life, many of the courses we offer are approved for the University C ([http://www.marquette.edu/explore/coc\\_studies.shtml](http://www.marquette.edu/explore/coc_studies.shtml)) ore of Common Studies, which all students are required to take. Also, many of our courses are integral to several interdisciplinary majors and minors that Marquette University offers, such as Family Studies, Africana Studies, Peace Studies and Women and Gender Studies.

The department also offers an internship program for any senior in one of the four majors within the department. Moreover, the department offers students the opportunity to expand their educational horizons by pursuing two majors within the department.

**Note:**

- A maximum of two approved courses within the department may be counted toward the completion of both majors.

### Majors in Social and Cultural Sciences

**Major in Anthropology (p. 326)**

**Major in Criminology and Law Studies (p. 329)**

**Major in Social Welfare and Justice (p. 334)**

**Major in Sociology (p. 331)**

### Minors in Social and Cultural Sciences

**Minor in Anthropology (p. 326)**

**Minor in Criminology and Law Studies (p. 329)**

**Minor in Social Welfare and Justice (p. 334)**

**Minor in Sociology (p. 331)**

## Anthropology

The Anthropology major is designed to give students exposure to the four main fields of anthropology:

1. Cultural Anthropology, which focuses on living cultures and their social relationships.
2. Physical or Biological Anthropology, which is the comparative study of human variation and evolution.
3. Archaeology, which studies the material remains of past cultures.
4. Linguistics, the study of human languages.

Students gain a rich perspective on both the universal threads that bind humans together and the rich tapestry of global cultural diversity. Students with a major in anthropology leave Marquette with great chances of admission to graduate and professional schools. Others pursue careers in education, public health, international business, archaeology, human rights work, historic preservation and more.

### Cultural Anthropology and Linguistics Courses:

|           |   |   |
|-----------|---|---|
| ANTH 2101 | Cultural Anthropology                       | 3 |
| ANTH 2203 | Human Geography                             | 3 |
| ANTH 2301 | Language and Culture                        | 3 |
| ANTH 3100 | Urban Anthropology                          | 3 |
| ANTH 3101 | Economic Anthropology                       | 3 |
| ANTH 3312 | Anthropology of Religion                    | 3 |
| ANTH 3330 | Women and Men in Cross-Cultural Perspective | 3 |
| ANTH 3350 | Native Peoples of North America             | 3 |
| ANTH 3360 | People and Cultures of the Middle East      | 3 |
| ANTH 4253 | Forensic Anthropology                       | 3 |
| ANTH 4316 | Culture Change and Development              | 3 |

### Physical Anthropology Courses:

|           |  |   |
|-----------|--|---|
| ANTH 1201 | Introduction to Biological Anthropology    | 3 |
| ANTH 2201 | Human Evolutionary Process                 | 3 |
| ANTH 3153 | Demography                                 | 3 |
| ANTH 4247 | Bioarchaeology: Linking Bones and Behavior | 3 |
| ANTH 4251 | Human Osteology and Odontology             | 3 |
| ANTH 4252 | Origins of the Human Species               | 3 |
| ANTH 4255 | Sex and Evolution                          | 3 |

## Archeology Courses:

|           |   |   |
|-----------|---|---|
| ANTH 2501 | Buried Cities and Lost Tribes                                   | 3 |
| ANTH 3201 | Archaeology and Prehistoric Cultures                            | 3 |
| ANTH 3242 | Prehistory of South America                                     | 3 |
| ANTH 3250 | Prehistory of North America                                     | 3 |
| ANTH 3543 | Archeology of Ancient Egypt                                     | 3 |
| ANTH 3546 | Archaeology in Action: Ethnographic and Experimental Approaches | 3 |
| ANTH 4144 | The Rise of Agriculture   | 3 |
| ANTH 4245 | Archaeology of Complex Societies                                | 3 |
| ANTH 4964 | Archaeological Fieldwork  | 3 |

## Major in Anthropology

The major in anthropology consists of a total of ten courses (30 credit hours): five required anthropology courses (15 credit hours) and five elective courses (15 credit hours) four of which must be upper-division, as listed below.

## Required Courses:

|           |   |   |
|-----------|---|---|
| ANTH 1001 | Introductory Anthropology                     | 3 |
| ANTH 2101 | Cultural Anthropology                         | 3 |
| ANTH 2201 | Human Evolutionary Process                    | 3 |
| ANTH 3201 | Archaeology and Prehistoric Cultures          | 3 |
| ANTH 4997 | Capstone: Theory and Practice in Anthropology | 3 |

\* Elective Courses: Choose five courses, at least four upper-division 15

Anthropology Courses OR up to two of courses listed below:

|              |                             |
|--------------|-----------------------------|
| SOCI 3500    | Culture, Health and Illness |
| or SOCI 4420 | Sociology of Religion       |
| or SOWJ 3450 | Arab and Muslim Americans   |

---

|                    |    |
|--------------------|----|
| Total Credit Hours | 30 |
|--------------------|----|

## Notes:

- \*Electives: Up to two of SOCI 3500 Culture, Health and Illness, SOCI 4420 Sociology of Religion or SOWJ 3450 Arab and Muslim Americans will count as electives in the ANTH major.

- Students wishing to complete double majors in ANTH, SOWJ or SOCI must complete the requirements for both majors. Two courses that are accepted by both majors (see the list of approved courses within each major's bulletin entry) may double count for both majors, for a total of 54 credit hours.

## Minor in Anthropology

The minor in anthropology consists of 18 credit hours, including one required introductory anthropology course (3 credit hours) and five courses of electives (15 credit hours) chosen from all courses designated as ANTH. One of these electives may be SOCI 3500 Culture, Health and Illness, SOCI 4420 Sociology of Religion or SOWJ 3450 Arab and Muslim Americans.

Required Course:

|   |                             |    |
|---|-----------------------------|----|
| ANTH 1001   | Introductory Anthropology   | 3  |
| *Elective Courses - Choose five of the following  |                             | 15 |
| Anthropology Courses OR one of the courses below: |                             |    |
| SOCI 3500   | Culture, Health and Illness |    |
| or SOCI 4420                                      | Sociology of Religion       |    |
| or SOWJ 3450                                      | Arab and Muslim Americans   |    |
| Total Credit Hours                                |                             | 18 |

### Note:

- \*Electives may be chosen from among all courses designated as ANTH, as well as **one** of SOCI 3500 Culture, Health and Illness, SOCI 4420 Sociology of Religion or SOWJ 3450 Arab and Muslim Americans.



# Criminology and Law Studies

The Criminology and Law Studies major is designed to provide a broad-based liberal arts education for undergraduates interested in careers in criminal justice and law. The major also provides preparation for professional and graduate study in law, criminology and public administration. Students in other major fields of study interested in expanding their knowledge of the legal system may elect criminology and law studies courses.

Courses in criminology and law studies are taught by faculty from both the Klingler College of Arts and Sciences and criminal justice practitioners.

## Major in Criminology and Law Studies

The major in criminology and law studies consists of 30 credit hours: six required courses (18 credit hours) and four elective courses (12 credit hours) in CRLS courses or up to two courses from the approved CLLS, SOCI and SOWJ courses as listed below.

### Required Courses:

|   |  |    |
|---|--|----|
| CRLS 1001   | Introduction to Criminology                                      | 3  |
| CRLS 2500   | Criminal Court Process   | 3  |
| CRLS 3050<br>or SOCI 3050                                 | Methods of Criminological Research<br>Methods of Social Research | 3  |
| CRLS 3100   | Corrections: Prisons, Probation and Parole                       | 3  |
| CRLS 3300<br>or CRLS 3350                                 | Police and Society<br>Police Organization and Administration     | 3  |
| CRLS 4400   | Criminal Law and Procedure                                       | 3  |
| * Elective Courses: Choose four CRLS courses, or:         |  | 12 |
| Two of the following courses can count toward CRLS major: |  |    |
| CLLS 2050   | Forensic Science   |    |
| SOCI 3050   | Methods of Social Research                                       |    |
| SOCI 3600   | Deviance and Social Control                                      |    |
| SOCI 4600   | The Social Reality of Crime and Justice                          |    |
| SOCI 4660   | Law and Society  |    |
| SOWJ 3320   | Victim Services and Policies                                     |    |
| Total Credit Hours  |  | 30 |

### Notes:

- Majors must fulfill half of their college curriculum mathematics-logic-computer requirement with SOCI 2060 Social Statistics.

- Students wishing to complete double majors in CRLS and SOWJ or SOCI must complete the requirements for both majors. Two courses that are accepted by both majors (see the list of approved courses within each major's bulletin entry) may double count for both majors, for a total of 54 credit hours.

## Minor in Criminology and Law Studies

The minor consist of 18 credit hours, including a required introduction to criminology course (3 credit hours) and five elective CRLS courses (15 credit hours) (with the exception of CRLS 3986 Internship and Seminar in Criminology and Law Studies), or one of the approved non-CRLS courses as listed below.

Required Course:

|   |   |    |
|---|---|----|
| CRLS 1001   | Introduction to Criminology             | 3  |
| * Elective Courses: Choose five CRLS courses (with exception of CRLS 3986). |   | 15 |
| One of the following courses may be counted as elective:                    |   |    |
| CLLS 2050   | Forensic Science                        |    |
| SOCI 3050   | Methods of Social Research              |    |
| SOCI 3600   | Deviance and Social Control             |    |
| SOCI 4600   | The Social Reality of Crime and Justice |    |
| SOCI 4660   | Law and Society                         |    |
| SOWJ 3320   | Victim Services and Policies            |    |
| Total Credit Hours  |   | 18 |

### Notes:

- Electives may be chosen from all CRLS courses with the exception of CRLS 3986 Internship and Seminar in Criminology and Law Studies.
- **One** of the non-CRLS courses listed above may count toward the minor.

# Sociology

The sociology major is designed to provide students with the knowledge and experience needed to navigate the many social worlds of peers, family, work and other cultural and institutional settings. Through course work, service learning and opportunities for research and internships, students gain the understanding of and ability to analyze human behavior and contemporary social issues and to evaluate and interpret research findings.

A major in sociology prepares students for professions such as those in human resources, social services, student services, management, marketing, higher education, among others. The sociology major also prepares students well for graduate study in sociology or other social sciences.

**Prerequisites:** The department recommends SOCI 1001 Principles of Sociology as the beginning course in Sociology. Most upper-division courses have a recommended prerequisite of SOCI 1001 Principles of Sociology. This means that the instructor will teach the course as if all students enrolled have completed satisfactory work in the prerequisite. Students who have not taken SOCI 1001 Principles of Sociology may enroll in most upper-division courses, but they should be prepared to take full responsibility for independently obtaining an adequate background should they or the instructor feel that it is necessary.

## Major in Sociology

The major in sociology consists of a total of ten courses (30 credit hours): five required courses (15 credit hours) and five elective courses (15 credit hours) as listed below.

### Required Courses:

|           |                         |   |
|-----------|-------------------------|---|
| SOCI 1001 | Principles of Sociology | 3 |
| SOCI 2060 | Social Statistics       | 3 |
| SOCI 3000 | Sociological Theory     | 3 |

### Methods Course:

|              |                                    |   |
|--------------|------------------------------------|---|
| SOCI 3050    | Methods of Social Research         | 3 |
| or CRLS 3050 | Methods of Criminological Research |   |

### Capstone Seminar:

|           |                               |   |
|-----------|-------------------------------|---|
| SOCI 4997 | Capstone Seminar in Sociology | 3 |
|-----------|-------------------------------|---|

\* Elective Courses: Choose five SOCI courses, three of which must be upper-division. 15

Up to two of the following courses will count as electives in the SOCI major

### Anthropology Course:

|           |                       |
|-----------|-----------------------|
| ANTH 2101 | Cultural Anthropology |
|-----------|-----------------------|

### Criminology and Law Studies Courses:

|           |   |
|-----------|---|
| CRLS 2100 | Juvenile Delinquency and Juvenile Justice |
|-----------|---|

|                                     |  |    |
|-------------------------------------|--|----|
| CRLS 3000                           | Criminological Theory                    |    |
| CRLS 3050                           | Methods of Criminological Research       |    |
| CRLS 4130                           | Women, Crime, and Criminal Justice       |    |
| CRLS 4140                           | Race, Crime and Punishment               |    |
| CRLS 4640                           | Family Violence and Public Intervention  |    |
| Social Welfare and Justice Courses: |  |    |
| SOWJ 2150                           | Immigrants and their Communities         |    |
| SOWJ 2200                           | Human Behavior in the Social Environment |    |
| SOWJ 3450                           | Arab and Muslim Americans                |    |
| SOWJ 4600                           | Faith-based Activism                     |    |
| Total Credit Hours                  |  | 30 |

**Notes:**

- An elementary course in statistics from another department may substitute for SOCI 2060 Social Statistics with the approval of the department chair, but 30 credit hours in Sociology will still be required.
- SOCI 2060 Social Statistics may be used simultaneously to satisfy the sociology requirement and to contribute toward the six credit hour College of Arts and Sciences requirement for mathematics-logic-computer science.
- SOCI 4997 Capstone Seminar in Sociology will ordinarily be taken in the final year of the major after 21 credit hours in Sociology have been earned.
- Students wishing to complete double majors in SOCI and ANTH, CRLS or SOWJ must complete the requirements for both majors. Two courses that are accepted by both majors (see the list of approved courses within each major's bulletin entry) may double count for both majors, for a total of 54 credit hours.

## Minor in Sociology

Eighteen credit hours, including SOCI 1001 Principles of Sociology and either SOCI 3000 Sociological Theory or SOCI 3050 Methods of Social Research (preferably both). The remaining four elective courses (12 credit hours) may be chosen from among all courses designated as SOCI, as well as **one** of the approved non-SOCI courses listed below.

**Required Courses:**

|              |                            |   |
|--------------|----------------------------|---|
| SOCI 1001    | Principles of Sociology    | 3 |
| SOCI 3000    | Sociological Theory        | 3 |
| or SOCI 3050 | Methods of Social Research |   |

|   |    |
|---|----|
| Elective Courses: Choose four courses from SOCI | 12 |
|---|----|

One of the following courses will also count as elective:

Anthropology Course:

|           |                       |
|-----------|-----------------------|
| ANTH 2101 | Cultural Anthropology |
|-----------|-----------------------|

Criminology and Law Studies Courses:

|           |   |
|-----------|---|
| CRLS 2100 | Juvenile Delinquency and Juvenile Justice |
|-----------|---|

|           |                       |
|-----------|-----------------------|
| CRLS 3000 | Criminological Theory |
|-----------|-----------------------|

|           |                                    |
|-----------|------------------------------------|
| CRLS 3050 | Methods of Criminological Research |
|-----------|------------------------------------|

|           |                                    |
|-----------|------------------------------------|
| CRLS 4130 | Women, Crime, and Criminal Justice |
|-----------|------------------------------------|

|           |                            |
|-----------|----------------------------|
| CRLS 4140 | Race, Crime and Punishment |
|-----------|----------------------------|

|           |   |
|-----------|---|
| CRLS 4640 | Family Violence and Public Intervention |
|-----------|---|

Social Welfare and Justice Courses:

|           |                                  |
|-----------|----------------------------------|
| SOWJ 2150 | Immigrants and their Communities |
|-----------|----------------------------------|

|           |  |
|-----------|--|
| SOWJ 2200 | Human Behavior in the Social Environment |
|-----------|--|

|           |                           |
|-----------|---------------------------|
| SOWJ 3450 | Arab and Muslim Americans |
|-----------|---------------------------|

|           |                      |
|-----------|----------------------|
| SOWJ 4600 | Faith-based Activism |
|-----------|----------------------|

|                    |    |
|--------------------|----|
| Total Credit Hours | 18 |
|--------------------|----|

## Department of Public Instruction Certification - Sociology Minor

College of Education students pursuing Department of Public Instruction certification, must complete six courses (18 credit hours), including three required courses (9 credit hours) and three elective courses (9 credit hours) in sociology, as listed below.

Required Courses:

|           |                         |   |
|-----------|-------------------------|---|
| SOCI 1001 | Principles of Sociology | 3 |
|-----------|-------------------------|---|

|           |                     |   |
|-----------|---------------------|---|
| SOCI 3000 | Sociological Theory | 3 |
|-----------|---------------------|---|

|           |                            |   |
|-----------|----------------------------|---|
| SOCI 3050 | Methods of Social Research | 3 |
|-----------|----------------------------|---|

|   |   |
|---|---|
| Elective Courses: Choose three SOCI courses | 9 |
|---|---|

|                    |    |
|--------------------|----|
| Total Credit Hours | 18 |
|--------------------|----|

## Social Welfare and Justice

The Social Welfare and Justice major is designed to provide students with the knowledge and experience needed to pursue successful careers in social service, social policy analysis, mediation and intervention, and social justice advocacy. Through course work, service learning and internships, students gain understanding of the complexities of a range of social welfare and justice issues and learn the analytic and practical skills needed to develop, evaluate and transform social welfare and justice policies and services. Students gain competency in the roles, ethics and values of the social work profession and in the core issue of global human needs and social development. Graduates have the knowledge base to work with culturally diverse groups and understand how social justice issues affect particular communities.

The major is flexible, allowing students to pursue their specific interests as they develop skills in service, advocacy and social change that form them as potential leaders in generating positive social justice outcomes. The major also prepares students well for graduate study in law, education, health care, public policy analysis, nonprofit management, social service administration, student affairs and conflict resolution.

Students may be able to apply some SOWJ course credits toward a Master's in Social Work degree.

### Major in Social Welfare and Justice

The major in social welfare and justice consists of a total of 30 credit hours: six required courses (18 credit hours) and four elective courses (12 credit hours) in SOWJ or from the list of approved elective courses listed below in ANTH, CRLS and SOCI.

#### Required Courses:

|           |   |   |
|-----------|---|---|
| SOWJ 1001 | Introduction to Social Welfare and Justice            | 3 |
| SOWJ 2200 | Human Behavior in the Social Environment              | 3 |
| SOWJ 3001 | Social Welfare Policy and Programs                    | 3 |
| SOWJ 3300 | Practice Skills with Individuals, Families and Groups | 3 |
| SOWJ 3986 | Internship in Social Welfare and Justice              | 3 |

#### Methods Course:

|              |                                    |   |
|--------------|------------------------------------|---|
| SOCI 3050    | Methods of Social Research         | 3 |
| or CRLS 3050 | Methods of Criminological Research |   |

\* Elective Courses - Choose four courses from the following: 12

Social Welfare and Justice - All SOWJ courses - OR

#### Anthropology Courses:

|           |   |
|-----------|---|
| ANTH 3330 | Women and Men in Cross-Cultural Perspective |
| ANTH 4316 | Culture Change and Development              |

#### Criminology and Law Studies Courses:

|                    |  |
|--------------------|--|
| CRLS 2100          | Juvenile Delinquency and Juvenile Justice  |
| CRLS 3100          | Corrections: Prisons, Probation and Parole |
| CRLS 3600          | Victimology                                |
| CRLS 3640          | Domestic Violence in the United States     |
| CRLS 4130          | Women, Crime, and Criminal Justice         |
| CRLS 4140          | Race, Crime and Punishment                 |
| CRLS 4640          | Family Violence and Public Intervention    |
| CRLS 4660          | Criminal Violence in America               |
| Sociology Courses: |  |
| SOCI 2200          | The Family                                 |
| SOCI 2500          | Self, Language and Social Interaction      |
| SOCI 3200          | Social Problems in Urban Society           |
| SOCI 3250          | Race and Ethnic Relations                  |
| SOCI 3280          | Race and Family                            |
| SOCI 3300          | Sociology of the Life Course               |
| SOCI 3400          | Behavior Patterns of Youth                 |
| SOCI 3500          | Culture, Health and Illness                |
| SOCI 4050          | Urban Ethnography: The City as Laboratory  |
| SOCI 4200          | Personal Troubles and Public Issues        |
| SOCI 4250          | African-American Social Thought            |
| SOCI 4300          | Sociology of Aging                         |
| SOCI 4400          | Social Inequality                          |
| SOCI 4450          | Sociology of Sex and Gender                |

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Total Credit Hours

30

**Notes:**

- Students also majoring in psychology may take PSYC 2050 Research Methods and Designs in Psychology in place of SOCI 3050 Methods of Social Research or CRLS 3050 Methods of Criminological Research.
- Majors must fulfill part of their college curriculum math/logic/computer requirement by taking SOCI 2060 Social Statistics.
- \*Elective Courses: All courses designated as SOWJ classes, courses listed above under ANTH, SOWJ and SOCI, as well as any departmental topics course approved by the department chair.

- Students wishing to complete double majors in SOWJ and ANTH, CRLS or SOCI must complete the requirements for both majors. Two courses that are accepted by both majors (see the list of approved courses within each major's bulletin entry) may double count for both majors, for a total of 54 credit hours.

## Minor in Social Welfare and Justice

The minor in social welfare and justice consists of six courses (18 credit hours), including three required courses (9 credit hours) and three elective courses (9 credit hours), as listed below.

### Required Courses:

|  |   |   |
|--|---|---|
| SOWJ 1001  | Introduction to Social Welfare and Justice            | 3 |
| SOWJ 3001  | Social Welfare Policy and Programs                    | 3 |
| SOWJ 3300  | Practice Skills with Individuals, Families and Groups | 3 |
| * Elective Courses: Choose three SOWJ courses, or: |   | 9 |

### Anthropology Courses:

|           |   |
|-----------|---|
| ANTH 3330 | Women and Men in Cross-Cultural Perspective |
|-----------|---|

|           |                                |
|-----------|--------------------------------|
| ANTH 4316 | Culture Change and Development |
|-----------|--------------------------------|

### Criminology and Law Studies Courses:

|           |   |
|-----------|---|
| CRLS 2100 | Juvenile Delinquency and Juvenile Justice |
|-----------|---|

|           |  |
|-----------|--|
| CRLS 3100 | Corrections: Prisons, Probation and Parole |
|-----------|--|

|           |             |
|-----------|-------------|
| CRLS 3600 | Victimology |
|-----------|-------------|

|           |  |
|-----------|--|
| CRLS 3640 | Domestic Violence in the United States |
|-----------|--|

|           |                                    |
|-----------|------------------------------------|
| CRLS 4130 | Women, Crime, and Criminal Justice |
|-----------|------------------------------------|

|           |                            |
|-----------|----------------------------|
| CRLS 4140 | Race, Crime and Punishment |
|-----------|----------------------------|

|           |   |
|-----------|---|
| CRLS 4640 | Family Violence and Public Intervention |
|-----------|---|

|           |                              |
|-----------|------------------------------|
| CRLS 4660 | Criminal Violence in America |
|-----------|------------------------------|

### Sociology Courses:

|           |                                       |
|-----------|---------------------------------------|
| SOCI 2500 | Self, Language and Social Interaction |
|-----------|---------------------------------------|

|           |                                  |
|-----------|----------------------------------|
| SOCI 3200 | Social Problems in Urban Society |
|-----------|----------------------------------|

|           |                           |
|-----------|---------------------------|
| SOCI 3250 | Race and Ethnic Relations |
|-----------|---------------------------|

|           |                 |
|-----------|-----------------|
| SOCI 3280 | Race and Family |
|-----------|-----------------|

|           |                              |
|-----------|------------------------------|
| SOCI 3300 | Sociology of the Life Course |
|-----------|------------------------------|



|           |   |
|-----------|---|
| SOCI 3400 | Behavior Patterns of Youth                |
| SOCI 3500 | Culture, Health and Illness               |
| SOCI 4050 | Urban Ethnography: The City as Laboratory |
| SOCI 4200 | Personal Troubles and Public Issues       |
| SOCI 4250 | African-American Social Thought           |
| SOCI 4300 | Sociology of Aging                        |
| SOCI 4400 | Social Inequality                         |
| SOCI 4450 | Sociology of Sex and Gender               |

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Total Credit Hours

18

**Notes:**

- \* Elective courses may be chosen from among all courses designated as SOWJ, plus any course from the above list of non-SOWJ courses.
- Any departmental topics course may be used as an elective with the approval of the department chair.

# Theology

**Chairperson:** *Susan K. Wood, SCL, Ph.D.*

Department of Theology website (<http://www.marquette.edu/theology/>)

## Mission

The Department of Theology concentrates on theological studies as distinguished from a purely empirical study of religion and from professional training for the ministry. Theology at Marquette explores faith and what it has to say about the fundamental purpose and meaning of all things, including our own existence. It seeks the deeper unity underlying all reality, its common origin and ultimate purpose.

The Department of Theology aims to help educate undergraduates by bringing them to an understanding of their respective faith commitments and traditions in harmony with their overall intellectual, critical and cultural development. The department also incorporates into Catholic theology an ecumenical dimension which was made normative by the Second Vatican Council, and which is regarded by the department as an essential service to the Church and the world. Theological questions evoke distinctive responses from the various religious perspectives represented in contemporary society. The department respects the various faith traditions of its students and works for mutual understanding among different faiths.

## Program Goals

Students are able to take courses in Scripture, the history of Christian thought, Christian doctrine and world religions. They explore the relationship between faith and justice in accordance with the recent General Congregations of the Society of Jesus.

In the undergraduate program students will:

- Demonstrate knowledge of the basic categories of theological reflection: Biblical, historical, systematic and ethical.
- Analyze texts for their theological content according to their particular literary genres and historical contexts.
- Use effective theological methods of research and argumentation.

## Theology Curriculum

The University Core of Common Studies (p. 84) (UCCS) theology requirement for graduation is the six-hour sequence of two courses: THEO 1001 Introduction to Theology and any second-level course (THEO 2000 level) approved for inclusion in the UCCS (approved courses are listed in this bulletin); the Arts and Sciences College curriculum theology requirement is the full sequence of THEO 1001 Introduction to Theology, a second-level course and any third-level course (THEO 4000-4995). Students may choose as electives additional courses, beyond the requirements of their college, from both the second- and third-level offerings, if they have the proper prerequisites.

The comprehensive educational goal of the theology curriculum is theological literacy at the level legitimately expected of graduates of a Catholic university. Through investigation of various theological sources, this intellectual formation habituates students to approaches, responses and critiques appropriate to the academic discipline of theology, which is "faith seeking understanding." Three specific objectives guide the theology curriculum. Every course is designed, first, to increase the

student's awareness of the mystery and religious dimensions of human life, particularly as conveyed in the basic narrative outline of salvation history — which characterizes the Christian worldview — from creation to fulfillment in Jesus Christ. This objective takes precedence in the first course, THEO 1001 Introduction to Theology; this first-level course introduces key sources and questions of theology, at the same time that it provides the student with a necessary knowledge base.

While cultivating the student's growing base of factual knowledge, courses go on to provide the student with training in theological understanding, primarily through the reading and interpreting of significant texts. Second-level courses, with their objective of "Exploring Theological Texts and Interconnections" — especially regarding representations of God, religious community and the human person — are designed to develop the skills required for such understanding. The knowledge and skills garnered in second-level courses are essential background for enabling students to achieve the objectives of the third-level courses.

Third-level courses, by investigating particular theological topics with discipline-specific methods, develop in students the critical habit of seeing into the depth-dimension of reality in light of religious faith and its historical effects on human societies. A wide variety of third-level classes, all building on the first-level and the second-level courses, develop this critical habit in the student. Third-level offerings include interdisciplinary courses to investigate theological questions; courses that focus on a particular person, time period or topic; courses that examine the impact of religion on our daily lives and courses that explore non-Christian religious traditions. As the culmination of the three-course sequence, these courses aim to produce Jesuit university graduates who are able to discern the perennially significant in the complexity and conflicting values of modern life, "men and women for others," intellectually prepared to "find God in all things." Building on the achievements of the first-level and second-level courses, third-level courses aim in a special way to encourage students to become responsible citizens, drawn to the intellectual life, knowledgeable about their own religious traditions and appreciative of the religious beliefs and practices of others in the human community.

In all courses, theological issues are introduced and discussed with respect for others in keeping with the Declaration on Religious Liberty of the Second Vatican Council.

## Major in Theology

The major in theology consists of 33 credit hours, which include a required introductory theology course (3 credit hours), one two-course sequence (6 credit hours) in Scripture, one course in each of the four theology areas (12 credit hours), three 4000 level theology electives (9 credit hours) and the capstone seminar in theology (3 credit hours), as listed below.

### Required Courses:

|  |  |   |
|--|--|---|
| THEO 1001  | Introduction to Theology   | 3 |
| Scripture Course Sequence - Choose one of the following sequences: |  | 6 |
| THEO 2000<br>& THEO 2110   | Hebrew Scriptures: Old Testament Overview<br>and New Testament Selected Books: | 3 |
| THEO 2100<br>& THEO 2010   | New Testament Overview<br>and Hebrew Scriptures/Old Testament Selected Books:  |   |
| Historical Theology - Choose one of the following courses:         |  | 3 |
| THEO 4130  | Religion and American Life   | 3 |
| THEO 4200  | Theology in the Early Church   |   |
| THEO 4210  | History and Theology of the Christian East                                     |   |

|  |   |
|--|---|
| THEO 4220  | St. Augustine: The Man and the Theologian                       |
| THEO 4230  | Theology in the Middle Ages                                     |
| THEO 4240  | Theology in the Reformation Era                                 |
| THEO 4250  | Martin Luther   |
| THEO 4260  | Theology in America   |
| THEO 4270  | American Catholic Life and Thought                              |
| THEO 4290  | Studies in Historical Theology                                  |
| Systematic Theology - Choose one of the following courses: |   |
| 3  |   |
| THEO 4300  | Contemporary Atheism and Theism                                 |
| THEO 4310  | Theology of the Holy Spirit                                     |
| THEO 4320  | Jesus the Christ  |
| THEO 4330  | Theology of the Church  |
| THEO 4340  | Sacraments and Christian Life                                   |
| THEO 4350  | The Eucharist   |
| THEO 4360  | Christian Prayer and Mysticism                                  |
| THEO 4370  | Protestant Thought and Practice                                 |
| THEO 4390  | Studies in Systematic Theology                                  |
| Ethics - Choose one of thee following courses:             |   |
| 3  |   |
| THEO 4400  | Christian Faith and Justice                                     |
| THEO 4405  | Christian Theology in Global Contexts                           |
| THEO 4410  | Family, Church, and Society                                     |
| THEO 4420  | Theology, Violence, and Nonviolence                             |
| THEO 4430  | Theology and the Natural Sciences                               |
| THEO 4440  | Foundations of Ecological Ethics                                |
| THEO 4450  | Medical Ethics  |
| THEO 4490  | Studies in Moral Theology                                       |
| World Religions - Choose one of the following courses:     |   |
| 3  |   |
| THEO 4020  | The Bible in the Jewish Community                               |
| THEO 4500  | Christ and World Religions: Theology of Interreligious Dialogue |
| THEO 4510  | Survey of World Religions                                       |

|   |                              |    |
|---|------------------------------|----|
| THEO 4520   | Jewish Thought and Practice  |    |
| THEO 4530   | Islam: Faith and Practice    |    |
| THEO 4540   | Hinduism, Yoga, and Buddhism |    |
| Elective Courses - Choose three THEO 4000 level courses |                              | 9  |
| Capstone Seminar Required:                              |                              |    |
| THEO 4997   | Capstone Seminar             | 3  |
| Total Credit Hours                                      |                              | 33 |

**Notes:**

- Depending on a student's preparation and educational needs, other courses may be substituted by approval of the departmental adviser, who may also suggest cognate courses in other departments.
- Students preparing for graduate studies in theology are encouraged to begin courses in a necessary classical (Greek/Hebrew/Latin) or modern (French/German) language.

## Major in Theology for Catholic School Ministry

This major is particularly focused on preparing future teachers of theology in Catholic high schools. Students taking this major are required to complete, in addition to a series of theology courses (36 credit hours), required courses in the College of Education's teacher education sequence (19 credit hours). This major does not meet Wisconsin State DPI requirements for state certification for teaching.

At the conclusion of the program, each student should be able to:

1. Demonstrate a basic knowledge of Scripture, Church history, Catholic doctrine and ethics.
2. Demonstrate an understanding of and appreciation for the Catholic intellectual and theological tradition.
3. Use critical tools in reading and interpreting the texts of the Christian tradition.
4. Provide evidence for effective skills in oral and written communication.
5. Demonstrate in practice knowledge of educational methods and effective skills sufficient for teaching at the high school level.

The major in theology for Catholic School Ministry consists of 36 credit hours, which include an introductory theology course (3 credit hours), seven required courses (21 credit hours), three third-level theology electives (9 credit hours) and the capstone seminar in theology (3 credit hours), as listed below.

Theology Course Requirements:

|           |   |   |
|-----------|---|---|
| THEO 1001 | Introduction to Theology                  | 3 |
| THEO 2000 | Hebrew Scriptures: Old Testament Overview | 3 |
| THEO 2100 | New Testament Overview                    | 3 |
| THEO 2210 | Theology Through the Centuries            | 3 |

|   |                               |    |
|---|-------------------------------|----|
| THEO 4320   | Jesus the Christ              | 3  |
| THEO 4330   | Theology of the Church        | 3  |
| THEO 4340   | Sacraments and Christian Life | 3  |
| THEO 4490   | Studies in Moral Theology     | 3  |
| Capstone Seminar Requirement:                       |                               |    |
| THEO 4997   | Capstone Seminar              | 3  |
| Elective courses - Choose three third-level courses |                               | 9  |
| Total Credit Hours                                  |                               | 36 |

## College of Education Requirements:

## Recommended Freshman or Sophomore Year:

|           |  |   |
|-----------|--|---|
| EDUC 1210 | Introduction to Schooling in a Diverse Society                                   | 3 |
| EDUC 1220 | Psychology of Human Development in Children and Adolescents in a Diverse Society | 3 |

## Recommended Sophomore Year:

|           |   |   |
|-----------|---|---|
| EDUC 2227 | Introduction to Learning and Assessment | 3 |
|-----------|---|---|

## Recommended Junior Year:

|           |                               |   |
|-----------|-------------------------------|---|
| EDUC 2037 | Literacy in the Content Areas | 3 |
| EDUC 4297 | Teaching in the Middle School | 4 |

## Recommended Senior Year:

|           |                                   |   |
|-----------|-----------------------------------|---|
| EDUC 4067 | Strategies in Religious Education | 3 |
|-----------|-----------------------------------|---|

|                    |  |    |
|--------------------|--|----|
| Total Credit Hours |  | 19 |
|--------------------|--|----|

**Notes:**

- In order to take EDUC 2037 Literacy in the Content Areas, EDUC 4067 Strategies in Religious Education, and EDUC 4297 Teaching in the Middle School, students must pass an examination administered through the College of Education.
- This major does not meet Wisconsin State DPI requirements for state certification for teaching.

## Minor in Theology

The minor in theology consists of six courses (18 credit hours); two of these courses may be lower-division, four courses must be upper-division.

## Special Programs

### Special Programs and Student Resources

The Klingler College of Arts and Sciences is by its very nature the heart of Marquette University. The tie that binds our more than 250 faculty and 30 majors of study is the opportunity for exploration. We'll challenge students to explore many ways of understanding, doing and succeeding – regardless of the major they decide to pursue.

We recognize that as our students are faced with many challenges and opportunities. To assist students in their transition from high school to their college academic career, we offer numerous resources, which we encourage students to use. They will help develop the academic skills that are needed to succeed, as well as introduce students to the many faculty members, advisers and staff members throughout the college that are available to guide them as they discover the value of a liberal arts education.

### Academic Success Workshops

The Klingler College of Arts and Sciences Advising Center sponsors a series of workshops to help first-year students achieve academic success. These workshops are offered every semester and focus on such topics as: stress management, major exploration, study skills, test taking techniques and time management.

### Advising Center ([http://www.marquette.edu/as/advising\\_index.shtml](http://www.marquette.edu/as/advising_index.shtml))

The Klingler College of Arts and Sciences Advising Center is a team of professional academic advisers committed to serving students and helping them achieve success. This award-winning center offers comprehensive assistance for each student's development and is open five days a week all year long.

Students are assigned an adviser within days of arriving at Marquette and receive service and support in a wide variety of ways. The advisers can assist students in choosing a major, determining career and academic goals, developing study skills, selecting courses and class schedule, referring them to other campus resources and preparing them for professional school.

### College Chaplain

The College of Arts and Sciences Chaplain works to make the mission statement a practical reality by offering a response to pastoral and spiritual inquiry, grief support, student advocacy and representation between academics and Student Affairs and finally education and practice on the spirituality founded by St. Ignatius of Loyola known as Ignatian Spirituality.

The Chaplain can be contacted through the main office of the College of Arts and Sciences or the Office of Campus Ministry (<http://www.marquette.edu/cm/index.shtml>) found in the Alumni Memorial Union.

### Explore the Majors Fair

The Klingler College of Arts and Sciences Advising Center sponsors the annual "Explore the Majors" Fair to encourage and assist freshmen and sophomores who are undecided about their areas of study to explore the many majors and minors in the College. The "Explore the Majors" Fair provides an excellent opportunity for students to discuss majors and minors with faculty representatives, upperclassmen and alumni from every major area in the Klingler College of Arts and Sciences.

## **First-Year English Program (<http://www.marquette.edu/english/first-year/index.shtml>)**

This program is designed to help students learn to communicate effectively. To that end, the program develops students' reading, writing, speaking and listening skills via critical literacy, which is the ability to express ideas, values and beliefs effectively in a variety of situations. To foster Critical Literacy, the FYE Program offers a two-course writing sequence: ENGL 1001 Rhetoric and Composition 1, *Academic Literacy* and ENGL 1002 Rhetoric and Composition 2, *Public Sphere Literacy*.

## **First-Year Reading Program (<http://www.marquette.edu/manresa/>)**

Through its faculty participation, the College of Arts and Sciences strongly supports the First-Year Reading Program, a university-wide initiative sponsored by the Manresa Project. Inspired by a desire to bring faculty, administrators and students together outside of a formal classroom, the reading and discussion aim to help students begin the life-long process of finding meaning in their lives. The program encourages all incoming first-year students to read a common text and discuss it with a small group of fellow students, led by a faculty member and student leader, during New Student Orientation in August. *Peace like a River* by Leif Enger is the ninth book chosen for the program, and was preceded by *The Chosen* by Chaim Potok (2002), *A Hope in the Unseen* by Ron Suskind (2003), *Bird by Bird* by Anne Lamott (2004), *A Lesson Before Dying* by Ernest J. Gaines (2005), *Hunger* by Lan Samantha Chang (2006), *Bombingham* by Anthony Grooms (2007), *Run* by Ann Patchett (2008) and *Persepolis: The Story of a Childhood* by Marjane Satrapi (2009).

## **First-Year Seminar: Introduction to Inquiry**

ARSC 1953 First-Year Seminar is a one-credit seminar wherein a small group of students (typically 10) meet with their faculty adviser once a week for the first 12 weeks of the fall semester. Students benefit from the two components of the seminar. First, students are encouraged to deepen the intellectual skills required to be successful at the university level. Each course meeting centers on the discussion of a short text, using specific rules of inquiry and dialogue that emphasize argumentation, listening and finding evidence. The second component addresses issues of academic advising and adjustment to university life. Potential topics include course selection, time-management, test taking, life in the dorm, campus resources, socio-emotional adjustment to the move from home, choosing a major, etc. The faculty leader serves as each student's pre-major adviser.

## **Freshmen Frontier Program ([http://www.marquette.edu/programs/freshman\\_frontier\\_program.shtml](http://www.marquette.edu/programs/freshman_frontier_program.shtml))**

The Freshman Frontier Program (FFP) is designed to expose students to college academics in a gradual way that is meaningful to them. The program begins in the summer before their first term at Marquette with a five-week session on campus when they will take credit and non-credit courses. During the academic year, students will be required to meet at least three times a semester with their FFP academic adviser. Tutors are available when extra help is needed. Students are in the program for a full year, although FFP students are welcome to use the services of the program on a voluntary basis in their remaining years at Marquette.

## **Honors Program (<http://www.marquette.edu/honors/>)**

For more than 40 years, Marquette University has invited its most intellectually talented students to accept the challenge of the Honors Program. The Honors Program provides students with something more for their Marquette experience. When you begin your courses in the Honors Program, you and a small group of your classmates will benefit from the attention and instruction of some of the university's



finest professors. The Honors Program director will work with you throughout your years at Marquette — observing your progress, helping you assemble your curriculum and acting as your resource to intellectual and professional opportunities at Marquette and throughout the city.

## **Norman H. Ott Memorial Writing Center (<http://www.marquette.edu/english/writingcenter/>)**

The writing center offers one-to-one tutoring to all Marquette students, staff and faculty on all kinds of writing projects, from first year English papers to graduate theses, from history papers to personal statements for law school. The center is staffed with mix of graduate students who usually teach a section of ENGL 1001 Rhetoric and Composition 1 or ENGL 1002 Rhetoric and Composition 2 and undergraduate peer tutors.

## **McCormick Comm-UNITY**

The McCormick Hall Inclusive Leadership CommUNITY is a vibrant, residential-learning community open to all undergraduate students. It has male and female wings and houses 70 residents. Students from minority and majority cultures have an opportunity to interact with and learn from each other in an environment accepting of all people.

Faculty members from the College of Arts and Sciences have actively participated in the Comm-UNITY offering ARSC 1954 The Dynamics of Cross-Cultural Engagement 1 and ARSC 1955 The Dynamics of Cross-Cultural Engagement 2, a two-semester seminar (1.5 credit hours/semester) focusing on cultural diversity that is required of all members of the CommUNITY. Students enhance their knowledge of cultures through readings and attendance at cultural events on campus and within the city. Students develop and cultivate leadership skills through planning and implementing social and educational programs with cultural themes, including dinners, speakers and retreats. Students are encouraged to share their experiences and knowledge through involvement in other student organizations and activities.

## **Student Organizations and Honors Societies**

The Helen Way Klingler College of Arts and Sciences offers students a wide array of co-curricular opportunities to extend the value of their education. Student organizations and honor societies affiliated with the college and/or advised by one of our faculty members include:

### **Student Organizations**

- Air Force Power Booster Club
- Anthropology Club
- Arnold Air Society (Professional Air Force ROTC Service Organization)
- Arts and Sciences Student Council
- Association of Social Welfare and Justice Students
- Campus Crusade for Christ
- Classical Fencing Society
- Criminology & Law Society

- Economics Association
- Gay/Straight Alliance
- International Affairs Society
- Italian Club
- Japanese Club
- Jeannette Kapus Silver Wings Chapter (Professional Organization Supporting the U.S. AirForce)
- Knights of Columbus
- Kuk Sool Won of Marquette
- Le Cercle Francais (French Club)
- Linguistics Club
- Medieval Society
- Muslim Student Association
- Native American Student Association
- Navy Nurse Corps
- Philosophy Club
- Physics Club
- Pre-law Society
- Psychology Students for Diversity
- Writing Society

### **Honor Societies**

- Alpha Epsilon Delta (Pre-health Professions Honor Society)
- Delta Phi Alpha (German Honor Society)
- Eta Sigma Phi (Classics Honor Society)
- Phi Alpha Theta (History Honor Society)
- Phi Sigma Tau (Philosophy Honor Society)
- Pi Delta Phi (French Honor Society)
- Pi Mu Epsilon (Mathematics Honor Society)
- Pi Sigma Alpha (Political Science Honor Society)
- Psi Chi (Psychology Honor Society)
- Sigma Delta Pi (Hispanic Honor Society)
- Sigma Tau Delta (English Honor Society)

- Theta Alpha Kappa (Theology Honor Society)
- Upsilon Pi Epsilon (International Honor Society for the Computing and Information Disciplines)

## Course Descriptions

### Air Force Aerospace Studies

#### **AFAS 1011. Foundations of the Air Force 1. 1 cr. hr.**

Introduction to the organizational structure and missions of Air Force organizations; officership and professionalism; and includes an introduction to communicative skills. Open to all students. Students pursuing an Air Force commission must register for AFAS 1051.

#### **AFAS 1012. Foundations of the Air Force 2. 1 cr. hr.**

Continuation of AFAS 1011. Open to all students. Students pursuing an Air Force commission must register for AFAS 1051.

#### **AFAS 1051. Leadership Laboratory. 0 cr. hrs.**

An average of two hours per week throughout the student's enrollment in AFROTC. Supervised instruction is conducted within the framework of organized cadet corps activities designed to develop each student's leadership potential. Also Air Force customs and courtesies, drill and ceremonies, career opportunities, and the life and work of an Air Force junior officer. All students pursuing Air Force commission must register for this course. SNC/UNC grade assessment.

#### **AFAS 2021. Evolution of the Air Force/Air and Space Power 1. 1 cr. hr.**

Focuses on factors contributing to the development of air power from its earliest beginnings through two world wars; the evolution of air power concepts and doctrine; and an assessment of communicative skills. Open to all students. Students pursuing an Air Force commission must register for AFAS 1051.

#### **AFAS 2022. Evolution of the Air Force/Air and Space Power 2. 1 cr. hr.**

Continuation of AFAS 2021. Open to all students. Students pursuing an Air Force commission must register for AFAS 1051.

#### **AFAS 2964. Air Force Field Training. 1-4 cr. hr.**

Off-campus summer program held at Maxwell Air Force Base, Montgomery, Alabama. The program provides the student with practical leadership experience and extensive practical training in fundamental leadership and military skills. Students do not incur military obligation, do not pay expenses, but do receive pay for this training. This course is offered in lieu of AFAS 1011, 1012, 2021, and/or 2022 at the direction of the Department Chair for students pursuing an Air Force Commission. Offered only during the summer. S/U grade assessment. Prereq: Cons. of dept. ch.

#### **AFAS 3131. Air Force Leadership Studies 1. 3 cr. hrs.**

A study of leadership and quality management fundamentals, professional knowledge, leadership ethics, and communicative skills required of an Air Force officer. Case studies are used to examine Air Force leadership and management situations as a means of demonstrating and exercising practical application of the concepts being studied. All students pursuing Air Force commission must register for AFAS 1051.

#### **AFAS 3132. Air Force Leadership Studies 2. 3 cr. hrs.**

Continuation of AFAS 3131. All students pursuing an Air Force commission must register for AFAS 1051.

#### **AFAS 4141. National Security Affairs/Preparation for Active Duty 1. 3 cr. hrs.**

Examines the national security policy process, regional studies, and formulation of the American defense policy, strategy and joint doctrine. Special topics of interest focus on the military as a profession; US Air Force functions, competencies and doctrine; officership; the military justice system; civilian control of the military; preparation for Air Force active duty; and current issues affecting military professionalism. Within this structure, continued emphasis is given to the refinement of communication skills. Students pursuing Air Force commission must register for AFAS 1051.

**AFAS 4142. National Security Affairs/  
Preparation for Active Duty 2. 3 cr. hrs.**

Continuation of AFAS 4141. All students pursuing Air Force commission must register for AFAS 1051.

**AFAS 4995. Independent Study in Air Force  
and Aerospace Studies. 1-3 cr. hr.**

Independent study of special topics in Aerospace Studies under faculty supervision. Topics selected by student/faculty conference. Prereq: Cons. of dept. ch.

## Anthropology

**ANTH 1001. Introductory Anthropology. 3 cr. hrs.**

Introduction to human social and cultural variation. Prehistory as reflected in archaeology. Human biological evolution as manifest in paleontology. Human biological variation in the contemporary world.

**ANTH 1201. Introduction to Biological  
Anthropology. 3 cr. hrs.**

The evolution of humans and history of evolutionary concepts. Evolutionary process documented in genetic principles, primate behavior, human ancestors and ongoing evolution in the human species. Cannot be taken for Arts and Sciences College Curriculum Natural Science credit by students who have received natural science credit in ANTH 2201. Credit will be given toward fulfillment of the Natural Science requirement in the Arts and Sciences College Curriculum.

**ANTH 2101. Cultural Anthropology. 3 cr. hrs.**

Fundamentals of ethnology, the comparative study of cultures, through a survey of anthropological community studies that represent a variety of world areas. Examines localized responses to universal human challenges such as meeting subsistence needs, resolving conflict, and coping with change. Traditional approaches to ethnographic fieldwork are reviewed as basis for considering innovations in method and theory.

**ANTH 2201. Human Evolutionary Process. 3 cr. hrs.**

Darwinian models of evolutionary process. Critiques of the Darwinian model with reference to macroevolutionary process in the order Primates and microevolutionary events in the species sapiens. Credit will be given toward fulfillment of the Natural Science requirement in the Arts and Sciences College Curriculum. Cannot be taken for Arts and Sciences Natural Science credit by students who have taken ANTH 1201.

**ANTH 2203. Human Geography. 3 cr. hrs.**

Description and world distribution of landscapes with (1) an analysis of past and present interplay among land forms, biota, and human activity; (2) an investigation into the manner in which culture is both restricted and stimulated by different habitats; and (3) a critique of the ecological problems resulting from modifying the landscape. Fulfills geography requirement for social studies teaching certification.

**ANTH 2301. Language and Culture. 3 cr. hrs.**

The role of language in human life. Comparative linguistic analysis. Interdependence of language and culture.

**ANTH 2501. Buried Cities and Lost Tribes. 3 cr. hrs.**

Using the tools of scientific inquiry, critical reasoning, and multicultural understanding, surveys a variety of historic and modern misconceptions about past cultures. Includes how to assess claims about the past, using archeological data and interpretative tools; and apply these new standards to gain appreciation for some truly exciting recent archeological discoveries. Prereq: ANTH 1001 or consent of instructor.

**ANTH 3100. Urban Anthropology. 3 cr. hrs.**

The anthropological analysis of social and cultural institutions in contemporary, pluralistic, industrial based, urban societies. The course emphasizes the contribution made to understanding such societies by use of the traditional analytic techniques developed by anthropologists for studying the institutions of simpler, smaller communities, techniques that complement those used by other social sciences. Recommended: ANTH 1001 or ANTH 2101.

**ANTH 3101. Economic Anthropology. 3 cr. hrs.**

The distributive aspects of nonliterate societies. Inter-relations of distribution with productive organization, division of labor, etc. Consideration of the problem and strategies of economic development. ANTH 1001 recommended.

**ANTH 3153. Demography. 3 cr. hrs.**

Methods of analyzing population structure in small-scale societies, including studies of mortality and fertility patterns in bio-social and environmental contexts. Prereq: ANTH 1001.

**ANTH 3201. Archaeology and Prehistoric Cultures. 3 cr. hrs.**

Development of human cultures from earliest evidence to literate urban societies in Europe, Asia, Africa, and the Americas. Examination of principal influences on prehistoric culture change.

**ANTH 3242. Prehistory of South America. 3 cr. hrs.**

Primitive and civilized peoples of ancient Middle and South America from Paleo-Indian period to Aztecs, Mayas, and Incas. Development of the great Indian nations and discussion of marginal areas. ANTH 3201 recommended.

**ANTH 3250. Prehistory of North America. 3 cr. hrs.**

Archaeology of North America, including Mexico, from earliest migrations to European contact; background for historic Indian peoples. Archaeological methods and controversies. ANTH 3201 recommended.

**ANTH 3312. Anthropology of Religion. 3 cr. hrs.**

Cross-cultural perspective on religion in human societies. Examples from Western and non-Western societies, rituals, healing, revitalization, role of religion.

**ANTH 3330. Women and Men in Cross-Cultural Perspective. 3 cr. hrs.**

Examination of roles and statuses of men and women, and of ideology of the nature of men and women, in selected societies around the world, including contemporary American society. The effects of political and economic conditions and policy initiatives on men and women.

**ANTH 3350. Native Peoples of North America. 3 cr. hrs.**

Ethnology of native peoples of North America: culture areas, major cultural patterns, history, and present conditions. Importance of American Indian studies to anthropological theory.

**ANTH 3360. People and Cultures of the Middle East. 3 cr. hrs.**

This course explores the variety of Middle Eastern cultures with reference to topics of central concern to cultural anthropology: environment, economics, social structure, political systems, religion, and culture change. Nomadic, rural agricultural, and urban groups are discussed. Recommended: ANTH 1001 or ANTH 2101.

**ANTH 3543. Archeology of Ancient Egypt. 3 cr. hrs.**

The archeological and historic record is used to provide a survey of ancient Egyptian socio-cultural development. Emphasis is given to the interaction of economic, political and religious forces involved in state formation. The development of religious belief in Egypt is studied through surveys of iconography and an introduction to reading hieroglyphs. ANTH 1001 or cons. of instr.

**ANTH 3546. Archaeology in Action: Ethnographic and Experimental Approaches. 3 cr. hrs.**

Introduces students to the theories and methods of ethnoarchaeology: how archaeologists understand material culture patterns and cultural content through the study of living groups. Case studies highlight the historical development of the field and the variety of approaches that are used. Recommended: ANTH 3201.

**ANTH 3986. Internship in Anthropology. 3 cr. hrs.**

Field experience in a community social service agency for the purpose of furthering the student's integration of theory and practise in a professional setting. Placement is for a minimum of 140 hours per semester under the supervision of agency personnel, and includes a weekly seminar with the internship coordinator. S/U grade assessment. Limited enrollment. Prereq: Sr. stndg., ANTH major, and cons. of internship coordinator.

**ANTH 4144. The Rise of Agriculture. 3 cr. hrs.**

Process and variation in the development of farming and herding societies. Archaeological record pertaining to domestication of plants and animals in North and South America, Near East, Africa, and East Asia. Prereq: ANTH 3201 or cons. of instr.

**ANTH 4245. Archaeology of Complex Societies. 3 cr. hrs.**

Patterns of processes involved in the development of complex social systems. Archaeological records of state formation and urbanization in Egypt, Mesopotamia, and Mesoamerica. Prereq: ANTH 3201.

**ANTH 4247. Bioarchaeology: Linking Bones and Behavior. 3 cr. hrs.**

Reconstruct patterns of human behavior from integrated biological data sets. Archaeological evidence drawn from human skeletal, plant, and faunal remains. Address questions of nutrition, pathology, occupation, and mortuary ritual. Prereq: ANTH 3201 or cons. of instr.

**ANTH 4251. Human Osteology and Odontology. 3 cr. hrs.**

The anatomy of the skeleton and teeth. Methods of analysis of biological dynamics of past populations including reconstruction of population structure and patterns of disease. Prereq: ANTH 2201.

**ANTH 4252. Origins of the Human Species. 3 cr. hrs.**

The biological past of the species sapiens. The biological legacy of the non-human primate past and the fossils which exemplify the evolutionary trends of our species. Prereq: ANTH 2201.

**ANTH 4253. Forensic Anthropology. 3 cr. hrs.**

Survey of the applications of human biology in criminalistics, including forensic applications of skeletal analysis, dermatoglyphics, DNA and hair. Studies methods of handling and analyzing these evidentiary materials, as well as the probative value each has in the criminal justice system. Special emphasis on the methods of personal identification. Reviews case studies of mass disasters, human rights abuses and homicides to demonstrate the utility of techniques taught in the course. Prereq: ANTH 1001.

**ANTH 4255. Sex and Evolution. 3 cr. hrs.**

The evolutionary significance of sex. Mechanisms of reproduction and sexual reproduction as a source of variation. Reproductive anatomy, sexual strategies and adaptation as well as sexual selection in the order Primates. Prereq: ANTH 2201.

**ANTH 4316. Culture Change and Development. 3 cr. hrs.**

Societal changes analyzed from holistic anthropological perspective. Recognizing factors of long-term cultural change; modernization of the West and Third World countries; ecological and social problems related to development in the contemporary world. Recommended: ANTH 1001 and ANTH 2101.

**ANTH 4931. Topics in Anthropology. 3 cr. hrs.**

Lectures and discussions in an area which, because of its topicality, is not the subject of a regular course. The special topics will be designated in the Schedule of Classes.

**ANTH 4964. Archaeological Fieldwork. 3 cr. hrs.**

An introduction to methods used in the excavation and analysis of prehistoric sites. Surveying techniques, stratigraphy, analyses of soils and landforms, analytical fundamentals of prehistoric material remains. Summer term offering only. Prereq: ANTH 3201 and SOCI 2060 or equiv.

**ANTH 4986. Advanced Internship in Anthropology. 3 cr. hrs.**

Continuation of the internship experience (ANTH 3986). Placement is for a minimum of 140 hours per semester of supervised practice at the same agency as the previous semester and includes a weekly seminar with the internship coordinator. Credits earned cannot be counted toward the major. S/U grade assessment. Limited enrollment. Prereq: Sr. stdng., ANTH 3986, and cons. of internship coordinator.

**ANTH 4995. Independent Study in Anthropology. 1-3 cr. hr.**

Supervised study of a specific area or topic in anthropology. Prereq: Cons. of dept. ch.

**ANTH 4997. Capstone: Theory and Practice in Anthropology. 3 cr. hrs.**

Major theoretical concepts and issues of Anthropology from 19th century beginnings to present. An overview of the development of the science with study of key figures and critiques of current work. Prereq: Sr. stdng and twelve hours of course work in Anthropology.

**ANTH 4999. Senior Thesis. 1-3 cr. hr.**

For majors in Anthropology. Research project and paper prepared under faculty supervision. Strongly recommended for students planning to enter graduate programs. Prereq: Sr. stdng. and cons. of dept. ch.

**Arabic****ARBC 1001. Elementary Arabic 1. 4 cr. hrs.**

Introduction to fundamentals of Modern Standard Arabic, including basic grammar, pronunciation and writing system. Emphasis on development of basic language skills: reading, writing, speaking, listening and comprehension. Open to students with no previous study of Arabic; or by departmental placement.

**ARBC 1002. Elementary Arabic 2. 4 cr. hrs.**

Continuation of ARBC 1001. Introduction to spoken and written Modern Standard Arabic. The course focuses on the fundamental language skills: speaking, listening, reading and writing. Prereq: ARBC 1001.

**ARBC 2001. Intermediate Arabic 1. 3 cr. hrs.**

Continuation of the study of Modern Standard Arabic, with emphasis on further development of all language skills: reading, writing, speaking and listening. Prereq: ARBC 1002; or by departmental placement.

**ARBC 2002. Intermediate Arabic 2. 3 cr. hrs.**

Continuation of ARBC 2001. Study of Modern Standard Arabic, with emphasis on further development of all language skills: reading, writing, speaking and listening. Prereq: ARBC 2001; or by departmental placement.

**ARBC 3200. Culture and Civilization of the Middle east. 3 cr. hrs.**

Introduction to the most important cultural aspects of the Middle East. Topics may include historical, political and economical developments, social issues, gender, religion, literature, music and art. Knowledge of Arabic language not required.

**ARBC 3210. Arabic Literature in English Translation. 3 cr. hrs.**

Readings in English translation of selected masterpieces of Arabic and Islamic literature. Knowledge of Arabic language not required. May be counted as part of the Arts and Sciences literature college requirement but not as part of the foreign language requirement.



## Arts Science Colloq.

### **ARSC 1001. Introduction to Trial Advocacy 1. 0 cr. hrs.**

Introduces students to analytical legal thinking, the skills required for trial advocacy, the legal system, problem solving, basic concepts of evidence, and public speaking by using the National Mock Trial Competition. Students learn by preparing to compete in the Competition. SNC/UNC grade assessment. ARSC 1002 must be completed during the same academic year.

### **ARSC 1002. Introduction to Trial Advocacy 2. 2 cr. hrs.**

Continuation of ARSC 1001. To receive credit, students must complete both ARSC 1001 and ARSC 1002 in the same academic year. S/U grade assessment, partially based on work completed in ARSC 1001. Prereq: ARSC 1001.

### **ARSC 1005. Cross-Cultural Issues in Study Abroad. 1 cr. hr.**

Course is specifically designed to prepare students who are planning to study and intern abroad as a component of their college career. Course prepares students for the challenges involved with cross-cultural interactions and the acculturation process. Students gain the skills necessary to understand and interact with individuals from different cultural backgrounds as well as recognize themselves as cultural beings. Through interaction with staff from the Office of International Education, students obtain the skills and knowledge which are needed to maximize their study abroad, internship or international service-learning experience.

### **ARSC 1020. Major Concepts in Modern Science 1. 4 cr. hrs.**

An interdisciplinary, integrated study of processes and principles of modern biology, chemistry, and physics. Scientific inquiry as a means of knowledge; major technological contributions to modern societies; stability, information transfer, and evolution of biological systems, emphasizing relevant chemical and physical processes in specific environments. 3 hrs. lec., 2 hrs. lab., 4 sem. hrs. May be counted as Natural Science toward the Arts and Sciences College Curriculum requirements, and for elementary/middle school and middle/secondary teaching certification. Does not count toward major requirements for biological sciences, chemistry, physics, and broad field science for early adolescence/adolescence teacher preparation.

### **ARSC 1021. Major Concepts in Modern Science 2. 4 cr. hrs.**

An interdisciplinary, integrated study of processes and principles of modern biology, chemistry, and physics. Scientific inquiry as a means of knowledge; major technological contributions to modern societies; stability, information transfer, and evolution of biological systems, emphasizing relevant chemical and physical processes in specific environments. 3 hrs. lec., 2 hrs. lab., 4 sem. hrs. May be counted as natural science toward the Arts and Sciences College Curriculum requirements, and for elementary/middle school and middle school/secondary teaching certification. Does not count toward major requirements for biological sciences, chemistry, physics, and broad field science for early adolescence/adolescence teacher preparation.

### **ARSC 1040. Career Planning and Decision-Making. 1 cr. hr.**

As career planning is an important step toward academic success and job satisfaction, this course is designed to help students assess their interests, skills, values, personality characteristics, investigate career possibilities, and learn how to use a wide variety of resources in their career search. Students will participate in self-discovery activities and learn about sound career decision making strategies as well as the world of work. The course stresses the value of liberal arts education and places an emphasis on exploring Arts and Sciences academic majors. This course is directed at freshmen and sophomores who are deciding a major and exploring careers.

**ARSC 1050. Job Search Strategies for Arts and Sciences. 1 cr. hr.**

Introduces students to the fundamentals of planning and organizing job search strategies. Emphasis is placed on identification of individual goals, assessment of talents, exploration of career options, analysis of the job market, effective use of job search materials (cover letters, resumes) and tools (interviewing, career fairs, networking), and management of career direction. Stresses the value of the Arts and Sciences degree in the labor market and develops job search skills that will be useful throughout lifelong career management. Primarily for juniors and seniors.

**ARSC 1953. First-Year Seminar. 1-3 cr. hr.**

An academic seminar that enhances critical thinking, reading, and communication skills. Weekly small group exploration of ideas, evidence, and argument, and investigation of college transitional issues. The faculty leader of each "Introduction to Inquiry" section is the student's academic adviser. Twelve weeks. S/U grade assessment. Limited to first-year students.

**ARSC 1954. The Dynamics of Cross-Cultural Engagement 1. 1.5 cr. hr.**

Seminar provides an academic component for the cross-cultural residence hall experience, Inclusive Leadership CommUNITY. Residence hall brings together majority and minority first year students selected because of their interest in being engaged in cross-cultural encounters in and out of the classroom. Requires attendance at designated extramural cultural events such as movies, plays, lectures or community outings, including a weekend retreat on diversity issues. Students read and discuss articles and books, keep journals, and reflect in cross-cultural experiences. Written assignments provide opportunities to demonstrate achievement of course goals. Prereq: Enrollment in the residence hall Inclusive Leadership CommUNITY program.

**ARSC 1955. The Dynamics of Cross-Cultural Engagement 2. 1.5 cr. hr.**

Seminar, building on ARSC 1954, provides an academic component for the cross-cultural residence hall experience, Inclusive Leadership CommUNITY. Requires attendance at designated extramural cultural events such as movies, plays, lectures or community outings, including a weekend retreat on diversity issues. Students read and discuss articles and books, keep journals, and reflect in cross-cultural experiences. Written assignments provide opportunities to demonstrate achievement of course goals. Prereq: Enrollment in the residence hall Inclusive Leadership CommUNITY program.

**ARSC 2000. Democracy, Culture and Public Policy: Africa. 3 cr. hrs.**

Examines the manner, culture, values and identity that shape global and domestic politics in the East Africa region. Emphasis on public policy efforts to promote democracy and advance the overall welfare of the nation. Consists of two weeks of study and travel in East Africa. Travel fees.

**ARSC 2970. Arts in a Democratic Society. 3 cr. hrs.**

Seminar on the role of the arts in a democratic society. Topics include government funding of the arts, cultural diversity and national arts policies, artists rights, and community interests, and public art. Readings of philosophers, culturally diverse writers, and political-social scientists. Experiential learning involving site visits to museums, performing arts centers, and libraries in the Washington D.C. area is integrated with readings. Prereq: Cons. of program director, Les Aspin Center for Government.

**ARSC 3005. Bridging the Local and Global: Unpacking your Study Abroad Experience. 2 cr. hrs.**

Designed specifically for students who have returned from an overseas academic experience and are looking to reflect upon and discern the impact of that experience. Through an interactive learning environment and a service-learning requirement in the local international community, student share their cross-cultural experiences, understand the different transformational moments of those experiences, and determine how they would like to integrate that transformation into the remainder of their undergraduate studies and future vocational choices.

**ARSC 3986. Internship. 1-4 cr. hr.**

Practical learning experiences. For example: An internship at the Center for the Study of Bioethics at the Medical College of Wisconsin. Interns are assigned projects in any of the several areas of the Bioethics Center. Areas may be in educational programs, research and investigation, medical ethics committees, publications and resources, and governmental relations. All internships require a commitment of 8-12 hours per week during the term. Selection is based on academic credentials, extra-curricular experience, and a written essay. May be taken only once. Grade is determined by evaluation of work performance and a final written assignment. S/U grade assessment. Prereq: Jr. stndg., 3.000 GPA, and cons. of instr.

**ARSC 4931. Topic in Arts and Sciences. 1-3 cr. hr.**

Offered according to availability of faculty, student interest and resources. Prereq: cons. of prog. dir.

**ARSC 4953. Seminar In Urban Social Issues. 3 cr. hrs.**

Les Aspin Center for Government, Washington, D.C. Prereq: cons. of prog. dir.

## Biology

**BIOL 1001. General Biology 1. 3 cr. hrs.**

Ecology. Theory of evolution. Taxonomy. Animal diversity. Structures of biological molecules. Cell structure and function. Vertebrate animal anatomy, physiology, and development. 3 hrs. lec., disc.

**BIOL 1002. General Biology 2. 3 cr. hrs.**

Glycolysis and cellular respiration. Photosynthesis. Mitosis and meiosis. Mendelian and molecular genetics. Microbial diversity. Plant form and function. 3 hrs. lec., disc. Prereq: BIOL 1001 and CHEM 1001; or cons. of instr.

**BIOL 1003. Biology Matters. 1 cr. hr.**

A seminar to introduce students early in their academic careers to modern biological and biomedical research. Students learn about various career paths biological science graduates can take. Medical school, dental school, and graduate school will be discussed, along with the possibility of combining biology with disciplines such as law, finance and computer science. Primarily for freshmen and sophomores. Twelve weeks. S/U grade assessment.

**BIOL 1009. Biology for Non-Science Majors. 3 cr. hrs.**

Designed for non-science students, the course introduces biological concepts and will focus on how scientific knowledge is created. Special emphasis on cell function, evolutionary biology, genetics, and modern genetic methods. Topics covered will include inheritance of genetic traits, cloning, and biotechnology, nervous system evolution, speciation, and extinction. 3 hrs. lec., disc. May be counted toward the Natural Science requirement of the College Curriculum.

**BIOL 1406. Plants, Pathogens and People. 3 cr. hrs.**

Plant diseases and their effects on food supplies and human history. Biology of plants and the pathogens that cause plant diseases. Controversies related to pesticide use, biological control, genetic engineering, biodiversity. Covers the major biology concepts. Hands-on activities and class discussions. Designed for nonscience students and elementary teacher preparation. Does not fulfill biological sciences major requirements.

**BIOL 2001. Principles of Biological Investigation. 3 cr. hrs.**

Introduction to selected instrumentation and techniques, including light microscopy, staining, aseptic procedures, spectrophotometry, gel electrophoresis, and immunoassays. Topics may include: photosynthesis, protein quantification, bacteria, fungi, nematodes, histology, evolution, embryo development, and physiology of the nervous system. Recommended for freshman and sophomores who have completed BIOL 1002 but may be taken concurrently. 1 hr. lec., 3 hrs. lab. Prereq: BIOL 1001.

**BIOL 2201. Genetics. 3 cr. hrs.**

Analysis of mechanisms of inheritance with emphasis on the nature of the gene, inheritance of genetic traits, and organisms with special advantages as model genetic systems. 3 hrs. lec., disc. Prereq: BIOL 1001 and BIOL 1002.

**BIOL 2301. Cell Biology. 3 cr. hrs.**

The cell is the basic unit of life; it is the fundamental unit from which all organisms are built. The concepts as well as the scientific evidence that underlie our current understanding of cellular organization and function are emphasized. Key cellular processes including membrane function, signaling, transcriptional regulation, protein targeting, vesicular trafficking, cytoskeleton, cell cycle regulation, and cell death are discussed. An attempt is made to relate these processes to our understanding of human disease. 3 hrs. lec., disc. Prereq: BIOL 1001 and 1002.

**BIOL 2401. Ecology. 3 cr. hrs.**

The study of the complex interactions of living organisms, including both micro-and macro-organisms, with each other and with their chemical and physical environments. Emphasis on the scientific principles involved in these interactions. 3 hrs. lec., disc. Prereq: BIOL 1002; or cons. of instr.

**BIOL 3202. Experimental Genetics. 3 cr. hrs.**

Genetic organization, function, engineering, and inheritance in procaryotic and eucaryotic organisms. 1 hr. lec., 4 hrs. lab. Prereq: BIOL 2201, which may be taken concurrently; Jr. stndg.; and cons. of dept. ch.

**BIOL 3302. Experimental Cell Biology. 3 cr. hrs.**

Molecular and biochemical studies of cellular structure and organization in relation to integrated cellular function. 1 hr. lec., 4 hrs. lab. Prereq: BIOL 2301.

**BIOL 3401. Advanced Ecology. 3 cr. hrs.**

The study of the complex interactions of micro-and macro-organisms with each other and with their chemical and physical environments. Emphasis on the environmental factors influencing these interactions. Students in BIOL 2401 and 3401 will attend the same lectures but will meet in separate discussion sections; furthermore, students in BIOL 3401 will be expected to complete assignments and exam material beyond those required for students enrolled in BIOL 2401. May not be taken for credit by students who have completed BIOL 2401. 3 hrs. lec., disc. Prereq: BIOL 1002; or cons. of instr.

**BIOL 3406. Plant Biology. 3 cr. hrs.**

Despite their tremendous diversity in form, seed plants share many similarities in their cellular organization, metabolism, and core development paradigms. Primary course objectives include student familiarity with organization, growth and development of vascular plants; application of genetic engineering to plants; and concepts of plant evolution and reproduction from algae to flowering plants. 3 hrs. lec. Prereq: BIOL 1002 or cons. of instr.

**BIOL 3501. Neurobiology. 3 cr. hrs.**

General principles of the organization and function of the vertebrate nervous system. Topics include the cellular and molecular mechanisms of cell excitability, synaptic transmission, and how neuromodulators regulate these functions in neuronal networks; mechanisms of learning and memory at the synaptic level; sensory systems from transduction to higher-order processing; and motor systems from the neuromuscular junction to voluntary movement to provide an integrative understanding of the nervous system. A functional approach to neuroanatomy will be integrated throughout the course. 3 hrs. lec., disc. Prereq: BIOL 1001.

**BIOL 3502. Experimental Neurobiology. 3 cr. hrs.**

Experimental analysis of synapses and neuronal circuitry using a variety of preparations and electrophysiological techniques. The basic electrical properties of excitable cells and chemical communication between cells are investigated. 1 hr. lec., 4 hrs. lab. Prereq: BIOL 3501, which may be taken concurrently, and cons. of dept. ch.; or BIOL 3701 and cons. of dept. ch.

**BIOL 3601. Animal Development. 3 cr. hrs.**

The study of the ordered formation of complex, multi-cellular organisms from a single cell. A multidisciplinary exploration of the integrative processes underlying animal development, incorporating techniques of cellular and molecular biology for the study of development. 3 hrs. lec. Prereq: BIOL 2301 or cons. of instr.

**BIOL 3602. Experimental Vertebrate Anatomy and Development. 3 cr. hrs.**

Study of vertebrate anatomy at both gross and microscopic levels, facilitated by dissection of representative mammals and examination of microscope slides. Includes a developmental component, supported by study of early chick embryos. Prereq: BIOL 1001 and BIOL 1002, or equiv., or cons. of inst.

**BIOL 3701. Human Physiology. 4 cr. hrs.**

Designed to explain to students in Biological Sciences, Physiological Sciences and Physical Therapy curricula the systemic and cellular mechanisms responsible for homeostasis in the human organism. 4 hrs. lec., disc. Prereq: BIOL 1001; Jr. or Sr. stdng; or cons. of instr.

**BIOL 3702. Experimental Physiology. 3 cr. hrs.**

Investigation of selected topics relating to the regulation of physiological activity in vertebrate organisms. Emphasis on use of modern recording systems and experimental preparation of the vertebrate for the study of integrated systemic functions. 1 hr. lec., 4 hrs. lab. Prereq: BIOL 3701, which may be taken concurrently, and cons. of dept. ch.

**BIOL 3801. Microbiology. 3 cr. hrs.**

Study of selected groups of microorganisms (algae, bacteria, and fungi). Topics include microbial morphology, taxonomy and metabolic activities, and the effect of microorganisms on man and on the earth. 3 hrs. lec., disc. Prereq: BIOL 1002 and Jr. stdng.

**BIOL 3802. Experimental Microbiology. 3 cr. hrs.**

Basic modern approaches to the laboratory investigation of microorganisms. A major part of the course is in-depth analysis of unknown microorganisms that students isolate from the environment. Prereq: BIOL 1002.

**BIOL 4101. Biochemistry and the Molecular Basis of Biology. 3 cr. hrs.**

Major themes in biochemistry are examined in the context of mammalian physiology. Topics include: protein structure and enzyme catalysis, carbohydrate and lipid metabolism in relation to energy production, protein and nucleic acid synthesis, and the nature of the genetic code. 3 hrs. lec., disc. Prereq: BIOL 1002 and CHEM 2112 or CHEM 2114; or cons. of instr.

**BIOL 4102. Experimental Molecular Biology. 3 cr. hrs.**

Purification, characterization and molecular analysis of proteins, nucleic acids, lipids and other biomolecules with emphasis on standard techniques widely used in research laboratories. 1 hr. lec., 4 hrs. lab. Prereq: BIOL 4101 which may be taken concurrently with cons. of instr.

**BIOL 4201. Genomics and Bioinformatics. 3 cr. hrs.**

The analysis of gene structure and genetic regulation in selected prokaryotes and plant and animal systems, as well as transgenic organisms. Introduction to the principles of bioinformatics and proteomics as applied to genome comparisons and protein structure and function. Models and algorithms for predictions of the biological properties of genetically modified nucleotide sequences and proteins. Prereq: BIOL 2201 or cons. of instr.

**BIOL 4703. Exercise Physiology. 3 cr. hrs.**

Study of the effects of acute and chronic exercise on selected organ systems. Particular emphasis will be placed on muscle, cardiovascular, respiratory, and environmental physiology. Prereq: BIOL 3701 or equiv., or cons. of instr.

**BIOL 4806. Immunobiology. 3 cr. hrs.**

Cellular and molecular mechanisms of the immune response. Nature of antigens and antibodies and their interactions. Special topics include complement, immediate and delayed hypersensitivity, transplantation and tumor immunobiology, immunosuppression, and immunological tolerance. 3 hrs. lec., disc.

**BIOL 4931. Topics in Biology. 1 cr. hr.**

Analysis of selected topics under faculty supervision. S/U grade assessment. Prereq: Cons. of instr. and cons. of dept. ch. Does not count toward requirements for biological sciences major.

**BIOL 4995. Independent Study in Biology. 1-3 cr. hr.**

Experimental analysis of a selected topic under faculty supervision. Prereq: Sr. stndg., cons. of instr., and cons. of dept ch.

## Chemistry

**CHEM 1001. General Chemistry 1. 4 cr. hrs.**

Introductory college chemistry. Fundamental principles of chemistry including stoichiometry, physical states of matter, energy relationships, periodic table, atomic and molecular structure and solutions. The following mathematical concepts are used in CHEM 1001 and CHEM 1002: Scientific notation, logarithms, the quadratic equation and proportionality. 3 hrs. lec., 3 hrs. lab., 1 hr. disc.

**CHEM 1002. General Chemistry 2. 4 cr. hrs.**

Continuation of CHEM 1001. Chemistry of metals and nonmetals, kinetics, chemical equilibrium, aqueous equilibria, free energy relationships, electrochemistry, nuclear chemistry, organic chemistry, and chemistry of the transition metals. Qualitative analysis included as part of the laboratory work. 3 hrs. lec., 3 hrs. lab., 1 hr. disc. Prereq: CHEM 1001.

**CHEM 1014. General Chemistry for Chemistry Majors. 4 cr. hrs.**

Continuation of CHEM 1001. Intended for chemistry majors. Emphasis in the lecture will be on kinetics, equilibrium, electrochemistry, nuclear chemistry, symmetry in coordination and organic chemistry, and industrial processes as applied from thermodynamic principles. The laboratory will consist of experiments designed to correlate with lecture; introduction of some research type instrumentation will be given. 3 hrs. lec., 3 hrs. lab. Prereq: CHEM 1001.

**CHEM 1020. General Chemistry Laboratory Only. 1 cr. hr.**

This is a variable title, (General Chemistry 1 or 2) designed to provide students with a formal course number in which they may register for a laboratory in general chemistry, without taking lecture, for existing general chemistry courses. Prereq: Cons. of dept. ch.

**CHEM 1030. General Chemistry Lecture Only. 3 cr. hrs.**

This is a variable title, (General Chemistry 1 or 2) designed to provide students with a formal course number in which they may register for a lecture in general chemistry, without taking laboratory, for existing general chemistry courses. Prereq: Cons. of dept. ch.

**CHEM 2111. Organic Chemistry 1. 4 cr. hrs.**

Modern theories of bonding, stereochemistry, synthesis and reaction mechanism. The chemistry of aliphatic hydrocarbons and their functional group derivatives. Laboratory: basic organic manipulations such as distillation, recrystallization, including simple synthesis. 3 hrs. lec., 4 hrs. lab. Prereq: CHEM 1002 or CHEM 1014.

**CHEM 2112. Organic Chemistry 2. 4 cr. hrs.**

Continuation of CHEM 2111. Extension of the chemistry of the remaining mono and polyfunctional, and aromatic compounds. Bonding, stereochemistry, mechanisms, synthesis, applied spectroscopy, heterocycles and natural products. Laboratory: synthesis, instrumental application, organic qualitative analysis. 3 hrs. lec., 4 hrs. lab. Prereq: CHEM 2111 or CHEM 2113.

**CHEM 2113. Organic Chemistry for Majors 1. 4 cr. hrs.**

Intended to be taken by chemistry majors, honors students, and other interested science majors. Principles of bonding, stereochemistry, mechanisms, kinetics, and spectrometry applied to aliphatic and aromatic hydrocarbons and simple monofunctional organic molecules. Laboratory: modern techniques using research instruments. 3 hrs. lec., 1 lab-recit., 4 hrs. lab. Prereq: CHEM 1002 or CHEM 1014.

**CHEM 2114. Organic Chemistry for Majors 2. 4 cr. hrs.**

Continuation of CHEM 2113. Mechanisms, structure-reactivity relationships, and complex syntheses applied to the remaining principle classes of organic compounds. Laboratory: organic qualitative analysis. 3 hrs. lec., 1 lab-recit., 4 hrs. lab. Prereq: CHEM 2111 or CHEM 2113.

**CHEM 2120. Organic Chemistry Laboratory Only. 1 cr. hr.**

A variable title course (Organic Chemistry 1 or 2) designed to provide students with a formal course number in which they may register for a lab in organic chemistry, without taking lecture, for existing organic chemistry courses. Prereq: Cons. of dept. ch.

**CHEM 2130. Organic Chemistry Lecture Only. 3 cr. hrs.**

Variable title course (Organic Chemistry 1 or 2) designed to provide students with a formal course number in which they may register for a lecture in organic chemistry, without taking lab, for existing organic chemistry courses. Prereq: Cons. of dept. ch.

**CHEM 3120. Chemistry Laboratory Only: Upper Division. 1-2 cr. hr.**

This is a variable title, variable credit course designed to provide students with a formal course number in which they may register for a laboratory without lecture basis for existing upper division chemistry courses. Prereq: Cons. of dept. ch.

**CHEM 3130. Lecture Only - Upper Division. 1-3 cr. hr.**

This is a variable title, variable credit course designed to provide students with a formal course number in which they may register for a lecture without laboratory basis for existing upper division chemistry courses. Prereq: Cons. of dept. ch.

**CHEM 3201. Quantitative Analysis. 4 cr. hrs.**

Fundamental theory of analytical chemistry covering principal gravimetric and titrimetric methods with introduction to electrochemical and spectrophotometric techniques and to separations. 3 hrs. lec., 4 hrs. lab. Prereq: CHEM 1002 or CHEM 1014.

**CHEM 3210. Instrumental Analysis. 4 cr. hrs.**

Continuation of CHEM 3201. Physical methods of analysis with emphasis on electrochemical, spectral and chromatographic methods. Offered annually. 3 hrs. lec., 4 hrs. lab. Prereq: CHEM 3201 and CHEM 4433, which must be taken concurrently, and PHYS 1014; or CHEM 3201 and CHEM 4433, which must be taken concurrently, and PHYS 1002.

**CHEM 3320. Inorganic Synthesis. 2 cr. hrs.**

Synthesis and characterization of transition and post-transition inorganic and organometallic compounds. Emphasis on structure elucidation through electronic and nuclear magnetic spectroscopy; handling of air-sensitive compounds; high-vacuum line techniques; homogeneous catalysis. 1 lab-recit., 4 hrs. lab. Prereq: CHEM 4330, which must be taken concurrently, and CHEM 4434.

**CHEM 3420. Physical Chemistry Laboratory. 2 cr. hrs.**

Laboratory experiments illustrating the principles of physical chemistry. 5 hrs. lab. Prereq: CHEM 4433 and CHEM 4434, which must be taken concurrently.

**CHEM 3931. Topics in Chemistry. 1-3 cr. hr.**

Topics of current interest in inorganic, organic, analytical, physical or biochemistry. Prereq: CHEM 4434, which may be taken concurrently, or cons. of instr.

**CHEM 4130. Characterization of Organic Compounds. 3 cr. hrs.**

Fundamental theory of spectral methods used to identify organic compounds. Structure elucidation through application of nuclear magnetic resonance, ultraviolet, infrared, and mass spectroscopy. Hands-on use of spectrometers for structural analysis of synthetic intermediates and products. 2 hrs. lec., 4 hrs. lab. Prereq: CHEM 4434.

**CHEM 4330. Inorganic Chemistry. 3 cr. hrs.**

Structure and bonding as related to physical and chemical properties; concepts relating to mechanisms; metal complexes; organometallic chemistry; molecular symmetry; catalysis; and descriptive chemistry to demonstrate applications of principles. Prereq: CHEM 4434.

**CHEM 4430. Introduction to Quantum Chemistry. 3 cr. hrs.**

Elementary quantum theory and applications to atoms, molecules, and chemical bonding. Prereq: CHEM 4434.

**CHEM 4431. Physical Chemistry: Fundamentals with Applications in Biological Sciences. 3 cr. hrs.**

One term course in Physical Chemistry with focus on basic principles, using examples drawn from applications to biological systems. Covers macroscopic, statistical, and microscopic descriptions of matter. Emphasis on thermodynamics, chemical and physical equilibria, transport properties, and kinetics. Prereq: CHEM 1002 or CHEM 1014; and MATH 1410 or MATH 1450; and PHYS 1002 or PHYS 1004.

**CHEM 4433. Physical Chemistry 1. 3 cr. hrs.**

Atomic and molecular structure, states of matter, spectroscopy, laws of thermodynamics, phase and chemical equilibrium, electrochemistry, transport properties, kinetics and macromolecules. 3 hrs. lec. Prereq: CHEM 2210, CHEM 2114, MATH 2450, and PHYS 1002; or CHEM 2210, CHEM 2114, MATH 2450, and PHYS 1004.

**CHEM 4434. Physical Chemistry 2. 3 cr. hrs.**

Continuation of CHEM 4433. 3 hrs. lec. Prereq: CHEM 4433.

**CHEM 4530. Introduction to Biochemistry. 3 cr. hrs.**

Bioenergetics, glycolysis, oxidative degradation, enzymes, metabolic controls, metabolism of carbohydrates, lipids and amino acids. Prereq: CHEM 2112 and CHEM 4431; or CHEM 2112 and CHEM 4433.



**CHEM 4630. Introduction to Polymer Science. 3 cr. hrs.**

Theory and practice of molecular weight determination for macromolecules. Characterization of polymers, including spectroscopic, chemical and mechanical procedures. Synthesis of polymers, including kinetics of reaction. Polymer additives and technology. Prereq: CHEM 2112 and CHEM 4434.

**CHEM 4932. Advanced Topics in Chemistry. 1-3 cr. hr.**

Advanced topics of current interest in inorganic, organic, analytical, physical or biochemistry. Prereq: CHEM 4434.

**CHEM 4953. Undergraduate Seminar:. 1-3 cr. hr.**

Emphasis on critical reading, analysis, and oral reporting of current literature sources in Chemistry. Prereq: CHEM 4434.

**CHEM 4995. Independent Study in Chemistry. 1-3 cr. hr.**

Analysis of a specific topic under faculty supervision. Prereq: CHEM 4434 and cons. of dept. ch.

**CHEM 4999. Senior Thesis. 2-4 cr. hrs.**

Laboratory work leading to a thesis under the direction of an adviser. Prereq: CHEM 4434 and cons. of dept. ch.

## Chinese

**CHNS 1001. Elementary Chinese 1. 4 cr. hrs.**

Introduction to fundamentals of Mandarin Chinese, including basic grammar, pronunciation and Chinese characters, with emphasis on reading, writing, speaking, listening and comprehension. Open to students with no previous study of Chinese or by departmental placement.

Continuation of CHNS 1001. Introduction to spoken and written Mandarin Chinese. Course focuses on the fundamental language skills: speaking, listening, reading and writing. Prereq: CHNS 1001.

**CHNS 2001. Intermediate Chinese 1. 3 cr. hrs.**

Continuation of the study of Mandarin Chinese, with emphasis on further development of all language skills: reading, writing, speaking and listening. Prereq: CHNS 1002; or by departmental placement.

**CHNS 2002. Intermediate Chinese 2. 3 cr. hrs.**

Continuation of CHNS 2001. Study of Mandarin Chinese, with emphasis on further development of all language skills: reading, writing, speaking and listening. Prereq: CHNS 2001; or by departmental placement.

**CHNS 3200. Chinese Culture and Civilization. 3 cr. hrs.**

Introduction to the most important aspects of Chinese culture and civilization. Topics may include historical and political development of Chinese society, Chinese language, literature, art, film, religions and philosophy. Course taught in English, knowledge of Chinese language not required.

**CHNS 3210. Chinese Literature in English Translation. 3 cr. hrs.**

Readings in English translation of selected masterpieces of Chinese literature. Knowledge of Chinese language not required. May be counted as part of the Arts and Sciences literature college requirement but not as part of the foreign language requirement.

## Classics

### **CLAS 1001. Greek and Latin Origins of Medical and Specialized Terminology. 3 cr. hrs.**

Systematic presentation of the most common Greek and Latin words whose derivations are important in medical, scientific and specialized terminology, such as that of psychology and law. Exercises in word-building and analysis of definitions. Study of prefixes, suffixes, and word roots. Knowledge of Greek or Latin not required. Does not count toward fulfillment of the foreign language requirement.

### **CLAS 3000. Greek and Roman Epic Poetry. 3 cr. hrs.**

A study of the origins and development of classical epic, including readings in English translation from the works of Homer and Vergil. Knowledge of Greek or Latin not required. May be counted as part of the Arts and Sciences literature curriculum requirement, but does not count toward fulfillment of the foreign language requirement.

### **CLAS 3005. Classical Foundations of European Literature. 3 cr. hrs.**

An introduction to the classical tradition in Western literature through comparison of ancient and modern texts. Knowledge of Greek or Latin not required. May be counted as part of the Arts and Sciences literature curriculum requirement, but does not count toward fulfillment of the foreign language requirement.

### **CLAS 3015. Greek and Roman Tragedy. 3 cr. hrs.**

A study of the origins and development of classical tragedy, with readings in English translation from the work of Aeschylus, Sophocles, Euripides, and Seneca. Knowledge of Greek or Latin not required. May be counted as part of the Arts and Sciences literature curriculum requirement, but does not count toward fulfillment of the foreign language requirement.

### **CLAS 3020. Greek and Roman Comedy. 3 cr. hrs.**

Origins and development, with readings in English translation of the individual plays of Aristophanes, Menander, Plautus, and Terence. Knowledge of Greek or Latin not required. May be counted as part of the Arts and Sciences literature curriculum requirement, but does not count toward fulfillment of the foreign language requirement.

### **CLAS 3025. Classical Mythology. 3 cr. hrs.**

Greek and Roman myths and legends in ancient literature and religion. Influence of Classical Mythology on the Western literary tradition. The heroic exploits and modern psychological motifs. Survey and viewing of the enormous artistic legacy inspired by the Classical myths. Knowledge of Greek or Latin not required; does not count toward fulfillment of the foreign language requirement.

### **CLAS 3030. Greek and Roman Rhetoric. 3 cr. hrs.**

A study of the origins and development of classical rhetoric, with readings in English translation from the works of Aristotle, Cicero, Seneca, Rhetor, Antiphon, Lysias, Demosthenes, and others. Knowledge of Greek or Latin not required. May be counted as part of the Arts and Sciences literature curriculum requirement, but does not count toward fulfillment of the foreign language requirement.

### **CLAS 3200. Greek Civilization and Art. 3 cr. hrs.**

Major achievements of the Ancient Greeks in literature and art presented in a historical framework. Survey of the architectural remains and masterpieces of Greek sculpture. Frequent visual supplementation of art and architecture. Background readings and discussion on such topics as Greek religious cults, the philosophical schools, pan-Hellenic competitions, and the role of the theatre in civic life. Knowledge of Greek not required; does not count toward the foreign language requirement.

**CLAS 3205. Roman Civilization and Art. 3 cr. hrs.**

Major achievements of Ancient Romans in literature, art, and architecture presented in a historical framework. Survey of the architectural remains. Background readings and discussions on such topics as Roman religious cults, the rise of Christianity, Stoicism and Roman Principate, rhetoric and education, and the legacy of Roman law. Knowledge of Latin not required; does not count toward fulfillment of the foreign language requirement.

**CLAS 3210. Greek and Roman Literature in English Translation. 3 cr. hrs.**

Readings in English translation from Greek and Latin authors. Knowledge of Greek or Latin not required. May be counted as part of the Arts and Sciences literature curriculum requirement, but does not count toward fulfillment of the foreign language requirement.

**CLAS 4931. Topics in Classical Civilization and Literature. 1-3 cr. hr.**

Topics will vary. Subject to be announced. Prereq: Sr. stdng., or cons. of dept. ch.

## Computer Science

**COSC 1000. Introduction to Computer Science. 3 cr. hrs.**

Introduction to the science behind today's computerized society. Emphasis placed on understanding the breadth and current status of computer science rather than the development of skills. Topics include machine architectures, operating systems, networking, algorithms and their development, programming languages, artificial intelligence, and data representation systems. (Previous computer experience is not required.) Prereq: Two years of college preparatory mathematics. This course satisfies the computer option in the Arts and Sciences core curriculum.

**COSC 1010. Introduction to Computer Programming. 4 cr. hrs.**

Introduction to abstraction, algorithmic thinking, simulation and testing for computer-based problem solving. Students will learn a high-level programming language and use tools developed by computer scientists and software engineers to solve problems. No prior programming experience is assumed. 3 hrs. lecture, 2 hrs. lab. Two years of college preparatory mathematics required.

**COSC 1020. Object-Oriented Software Design. 4 cr. hrs.**

Software development using Java. Topics include classes and interfaces as design patterns, the Java API, current object-oriented design methodologies, an introduction to the Internet and the development of Web applications. Projects involve the development of graphical interfaces and net-centric applications. 3 hrs. lecture, 2 hrs. lab. Prereq: COSC 1010 or advanced placement.

**COSC 2010. Data Structures for Engineers. 3 cr. hrs.**

The study of popular data structures such as lists, stacks, queues and trees and their related algorithms. Prereq: COSC 1010 or EECE 1610; knowledge of JAVA. Credit will not be given for both COSC 2010 and COSC 2100.

**COSC 2100. Data Structures and Algorithms 1. 3 cr. hrs.**

Introduction to algorithm analysis and complexity theory presented in the context of data structures and the algorithms used to manipulate them. Includes introduction to traditional data structures, indexing, hashing, and time and space complexity. Prereq: COSC 1020 and MATH 2100.

**COSC 2200. Hardware Systems. 3 cr. hrs.**

Introduction to computer architecture and machine level programming. Topics include combinational and sequential binary logic, assembly languages, memory management, caching, pipelining, bus architecture, interrupts and I/O processing. Course may consist of a 3 hr. lecture or a 2 hr. lecture and 2 hr. lab. Prereq: COSC 1020 and MATH 2100.

**COSC 3100. Data Structures and Algorithms 2. 3 cr. hrs.**

Types of algorithms such as divide-and-conquer, greedy, probabilistic, graph traversal, heuristic, and parallel algorithms. Computational complexity including time and space complexity, and the P=NP problem. Prereq: COSC 2100 or COSC 2010.

**COSC 3250. Operating Systems. 3 cr. hrs.**

Fundamental concepts of operating systems including process control and scheduling, synchronization, memory management, file systems, device control, and the boot process. Course may consist of a 3 hr. lecture or a 2 hr. lecture and 2 hr. lab. Prereq: COSC 2200 and COSC 2100 or COSC 2010.

**COSC 3300. Networks and Internets. 3 cr. hrs.**

Fundamentals of popular network technologies, internet organization and underlying protocols, domain administration, support of internet applications and distributed systems, domain and internet-wide security. Course may consist of a 3 hr. lec. or a 2 hr. lec. and 2 hr. lab. Prereq: COSC 2100 or COSC 2010.

**COSC 3410. Programming Languages. 3 cr. hrs.**

A comparative study of programming paradigms and representative programming languages. Topics include binding times, control of data, control of execution, execution environment, the role of language as an organizational tool, modularization, and the concept and significance of universal programming languages. Prereq: COSC 2100 or COSC 2010.

**COSC 3550. Programming Computer Games. 3 cr. hrs.**

Algorithms, data structures, and tricks used to program arcade-style video games written in Java. Topics include 2D animation, sprites, interaction, music/sound, 3D worlds, network games. Underlying issues include graphical user interfaces, multi-threaded applications, real-time concerns, use of APIs, and client-server applications. Prereq: COSC 2200 and COSC 2100 or COSC 2010.

**COSC 3810. Software Design and Analysis. 3 cr. hrs.**

Issues involved in the design and implementation of large software systems. Software lifecycle, software design methodologies, human factors analysis, project management. Prereq: COSC 2100 or COSC 2010.

**COSC 3977. Problem Solving -- Programming. 1 cr. hr.**

Students will study and implement computing problems, examine their solutions, apply classical algorithms, and formulate strategies for teamwork and problem solving in a programming contest environment. This course is a preparation for the ACM International Collegiate Programming Contest. S/U grade assessment. Prereq: Cons. of instr.

**COSC 4110. Formal Languages and Computability. 3 cr. hrs.**

Regular languages, finite state automata, and lexical analysis; context free languages, push-down automata, parsing, and the rudiments of LL and LR parsers; general phrase-structure languages, Turing machines, the Church-Turing thesis, the halting problem, universal programming languages. Prereq: COSC 3100.

**COSC 4400. Compiler Construction. 3 cr. hrs.**

Lexical analysis, parsing, code generation, and optimization. Includes theoretical foundations and the practical concerns of implementation. Prereq: COSC 2200 and COSC 3410; or COSC 3410 and COSC 2010.

**COSC 4600. Fundamentals of Artificial Intelligence. 3 cr. hrs.**

An introduction to the broad field of artificial intelligence. Topics include problem solving by searching, knowledge representation, reasoning, planning, decision making, learning, perception, and language processing. Offered alternate fall terms. Prereq: COSC 2100 or COSC 2010; and COSC 2200.

**COSC 4610. Data Mining. 3 cr. hrs.**

Techniques for extracting and evaluating patterns from large databases. Introduction to knowledge discovery process. Fundamental tasks including classification, prediction, clustering, association analysis, summarization, and discrimination. Basic techniques including decision trees, neural networks, statistics, partitional clustering, and hierarchical clustering. Offered alternate spring terms. Prereq: COSC 4600 or COEN 4850; and COSC 4800.

**COSC 4800. Principles of Database Systems. 3 cr. hrs.**

Topics include database concepts and architecture, data modeling, formal query languages such as relational algebra, commercial query language SQL, database access from application programs and a brief examination of advanced concepts including transactions, distributed databases, security and XML. Prereq: COSC 2100 or COSC 2010.

**COSC 4860. Component-Based Software Construction. 3 cr. hrs.**

Introduction to software components in the context of the object-oriented paradigm. Component development, component selection and adaptation/customization, component deployment and assembly/integration, and system architecture. Industry standards such as JavaBeans, CORBA Component Model, and Microsoft COM/DOM/COM+. Prereq: COSC 1020 or COSC 2010; and MATH 2100.

**COSC 4920. Principles of Design. 3 cr. hrs.**

Fundamentals of structured software design and development applied in a multi-disciplinary, team-based project environment. Teams create project definition and specification based on user needs. Activities focus on software lifecycle, design methodologies, human factor analysis, teamwork, customer interaction, project management and effective communication. Work culminates in a technically and economically viable proposal for future development. (This course specifies and designs a project for implementation in COSC 4998.) Prereq: MATH 1400 or 1451; MATH 2100 or 2350; COSC 3250; COSC 3100; and Sr. stndg.

**COSC 4931. Topics in Computer Science. 1-3 cr. hr.**

Topics selected from one of the various branches of computer science. Specific topics to be announced in the Schedule of Classes.

**COSC 4953. Undergraduate Seminar. 3 cr. hrs.**

Designed to initiate a selected group of qualified undergraduates into the techniques and discipline of scholarly research by concentrated work in a restricted field. Emphasis on critical reading and analysis of sources. Specific subjects to be announced in the Schedule of Classes. Prereq: Cons. of dept. ch.

**COSC 4987. Co-op Work Period. 0 cr. hrs.**

Students work full-time during fall or spring terms in a cooperative education program work assignment approved in advance by the department. Responsibilities include relevant academic content. Grading and credits are accomplished by registering for COSC 4988 during the following term. Fee. Prereq: Jr. stndg. SNC/UNC grade assessment.

**COSC 4988. Co-op Grading Period. 1 cr. hr.**

Grading for preceding co-op work assignment is accomplished by completing a report on the work assignment, a report on academic material related to the work assignment, and other materials as required. Grading is completed during the school term following the work assignment. May be taken more than once, but a maximum of 2 credits may be counted toward a major in the department. Prereq: Jr. stndg. and COSC 4987.

**COSC 4995. Independent Study in Computer Science. 1-3 cr. hr.**

Directed reading and/or research in computer science under a member of the staff. Prereq: Cons. of dept. ch.

**COSC 4998. Senior Design Project. 3 cr. hrs.**

Given initial design and project specification, focus is on detailed software design, prototyping and testing of design concepts in a realistic multi-disciplinary team environment. "Team-based activities" result in implementation of a software system in support of a project and culminate in a working prototype satisfying user needs and software specification. Final report documents prototype details and verifies resulting project meets needs and specifications. (This course implements project specified and designed in COSC 4920.) Prereq: MATH 1400 or 1451; MATH 2100 or 2350; COSC 3250; COSC 3100; and Sr. stndg.

**COSC 4999. Senior Thesis. 2 cr. hrs.**

Preparation of a thesis by approved students under the direction of an adviser from the staff. Prereq: Cons. of dept. ch.

**CRLA 51. . 3 cr. hrs.****CRLA 83. . 3 cr. hrs.****CRLA 193. . 3 cr. hrs.****Criminology Law Studies****CRLS 1001. Introduction to Criminology. 3 cr. hrs.**

Survey of recent trends in crime and delinquency. The nature of and societal reaction to criminal behavior. Personal and social factors in crime causation. Critical analysis of criminological theories as well as the operation of criminal justice agencies.

**CRLS 2001. Introduction to the Law. 3 cr. hrs.**

Legal concepts and classifications; legal philosophy, including the sources and nature and functions of law; legal methods; legal research; legal ethics; basic processes and judicial processes and procedures; the court system, state and federal.

**CRLS 2100. Juvenile Delinquency and Juvenile Justice. 3 cr. hrs.**

Definitions of delinquent behavior. Nature, etiology, and extent of juvenile delinquency; contributing social problems; adolescence as a subculture. The adjudication process for juveniles: philosophy, development, and organization. Diversion, detention, and treatment of the juvenile offender.

**CRLS 2500. Criminal Court Process. 3 cr. hrs.**

Analysis of the criminal court process from its initial stages through post-conviction review. Topics include court structure, the legal actors of the court process, prosecutorial and defence decision-making, bail setting, pleas bargaining, trial operations, and the organization and management of judicial and prosecutorial discretion.

**CRLS 3000. Criminological Theory. 3 cr. hrs.**

Analysis of the nature and consequences of delinquency and crime. Classical and contemporary examinations of criminal behavior. The effects of social interaction, social class, social organization, small groups, and other variables on crime patterns and efforts to cope with crime. Relationship of criminological theory to social policy issues.

**CRLS 3050. Methods of Criminological Research. 3 cr. hrs.**

Basic methodological issues in the study of crime, criminals, and the law; principles, purposes, and limits of research; introduction to empirical research design and methods of inquiry, including formulating and testing hypotheses, sampling procedures, data collection techniques, and ethical issues in preparation of research reports. May not be taken for credit by students who have received credit for SOCI 3050. Prereq: CRLS 1001, or SOWJ 1001, or SOCI 1001 and SOCI 2060 or equiv., or cons. of instr.

**CRLS 3100. Corrections: Prisons, Probation and Parole. 3 cr. hrs.**

Analysis of the organization of correctional agencies and the role of corrections in the criminal justice system. Review of relevant theories, practices, systems, and treatment methods. Prereq: CRLS 1001.

**CRLS 3300. Police and Society. 3 cr. hrs.**

Social and historical origins of the police; police organization; police culture, roles and careers; police in the legal system, police discretion in practice, police and the community. Prereq: CRLS 1001.

**CRLS 3350. Police Organization and Administration. 3 cr. hrs.**

Organization and administration of police agencies. Principles of planning, personnel management, line operations, staff and auxiliary services. Organizational models and leadership styles. Internal control and policy formation. Evaluation of effectiveness.

**CRLS 3550. Street Gangs and Crime. 3 cr. hrs.**

Examination of the history of gangs and an analysis of the current gang culture and the social context in which it operates. Exploration of the criminological theories of gangs as well as community based and legal intervention strategies. Prereq: CRLS 1000; or cons. of instr.

**CRLS 3560. Conflict and Terror. 3 cr. hrs.**

Historical origins, causes, consequences, major institutional actors, and public policy choices associated with contemporary international and domestic terrorism. Also explored are political, economic, technological, law enforcement, and military based counterterrorism strategies and tactics. Prereq: CRLS 1000; or cons. of instr.

**CRLS 3600. Victimology. 3 cr. hrs.**

Examination of the roles and functions of the victim within the civil and criminal justice systems. An investigation into victim attitudes, beliefs, problems, and needs; theories of victimization; experiences of victims within the legal system; victim assistance programs; and public policy and victimology.

**CRLS 3640. Domestic Violence in the United States. 3 cr. hrs.**

Focuses on the ways in which race and ethnicity shape definitions of and experiences with domestic violence and how different cultural groups interact with community and legal resources designed to assist victims and perpetrators of domestic violence. Examines the implications this has for policy, practice and justice in society. Prereq: CRLS 1001 or SOWJ 1001 or cons. of inst.

**CRLS 3660. Sex Offenses and Offenders. 3 cr. hrs.**

Examines the nature of distribution of sex offenses and the various types of sex offenders. Approaches of mental health and criminal justice systems are examined, including an analysis of laws, policies and practices surrounding treatment, management and control of sex offenders. Impact on sex offenders, families and victims will also be addressed. Prereq: CRLS 1001 or consent of instructor.

**CRLS 3751. History and Philosophy of Crime and Punishment. 3 cr. hrs.**

A study of crime and punishment from both the historical and philosophical perspectives. The course will emphasize the European experiences as a foundation for understanding American developments. Emphasis will be placed on the interdisciplinary aspects of crime and punishment. Prereq: Soph. standg. and PHIL 1001. Same as HIST 3751 and PHIL 3751. May be counted toward the core curriculum requirement in either philosophy or social-behavioral science.

**CRLS 3986. Internship and Seminar in Criminology and Law Studies. 3 cr. hrs.**

Field experience in a community social service agency for the purpose of furthering the student's integration of theory and practice in a professional setting. Placement is for a minimum of 140 hours per semester under the supervision of agency personnel, and includes a weekly seminar with the internship coordinator. S/U grade assessment. Limited enrollment. Prereq: Sr. standg., CRLS major and cons. of internship coordinator.



**CRLS 4100. Ultimate Penalties in the Criminal Justice System. 3 cr. hrs.**

A critical look at the rationales and history of corporal punishment, capital punishment, and life imprisonment without possibility of parole in order to understand the endurance of these types of sanctions in modern society. The focus will be on the philosophical, legal, social, and political aspects of the punishments. Research on ultimate punishments, such as frequency of use, characteristics of offenses and offenders, will also be presented. In addition, the course will examine the experience of sentenced offenders and their families, and correctional staff in implementing the punishments.

**CRLS 4110. Media Perspectives on Urban Crime. 3 cr. hrs.**

Historical overview of how urban crime has been portrayed in the media. Analysis of contemporary media presentations of urban crime, criminals, and the criminal justice system (including police, courts, and the correctional system). Social scientific theory and analysis regarding media portrayals of crime, criminals, and the criminal justice system.

**CRLS 4120. Comparative Justice Systems. 3 cr. hrs.**

The nature and character of police, prosecutorial, court, and correctional activity and operations in world legal systems. An examination of common law, civil law, socialist, and Islamic systems of law and social control.

**CRLS 4130. Women, Crime, and Criminal Justice. 3 cr. hrs.**

Examination of the roles of women in the criminal justice system. Critical analysis of the relationship of women as offenders, as victims, and as agents of social control. Review of relevant theories and practices and both historical and contemporary issues.

**CRLS 4140. Race, Crime and Punishment. 3 cr. hrs.**

Focus on racial differences on offending and violence; racial discrimination in the criminal justice system; and the impact of criminal punishment on racial inequality. Course will cover current and classical research in race, crime and social control and explore their theoretical and empirical dimensions. Prereq: CRLS 1001 or consent of instructor.

**CRLS 4150. White Collar Crime. 3 cr. hrs.**

Survey of current theoretical, research and public policy issues regarding white-collar crime. Definitions of white-collar crime as well as various typologies of white-collar crime activity. The nature, extent, and consequences of white-collar crime in the U.S. strategies for combatting white-collar crime as well as prospects of alternative systems of control, such as civil litigation, will be assessed.

**CRLS 4170. Organized Crime. 3 cr. hrs.**

Examination of the political, social, and economic conditions involved in the appearance and expansion of organized crime in the United States. Descriptions of structures as well as internal and external dynamics, including incentives and penalties employed by criminal groups. Explanation of investigative techniques and impact of police, courts, and correctional agencies.

**CRLS 4250. Clinical Criminology. 3 cr. hrs.**

The theory, research and practice dimensions of clinical criminology, with a focus on sociological, psychiatric, biological, biosocial learning, cognitive, psychoanalytic theory. Examination of deviant and/or criminal interactions and their consequences. Topics for possible inclusion: substance abusers, psychopathic and violent offenders, spouse and child abusers, sex offenders, juvenile offenders, female offenders. Orientation to clinical techniques and therapy as they apply to intervention, decision-making, incarceration and sentencing, and modifications of behavior.



**CRLS 4340. Financial Crime Investigation. 3 cr. hrs.**

This course will introduce current perspectives and procedures used by the financial investigator in detecting and resolving financial crimes. Included will be the specific study of: methods of tracing funds, financial record keeping, accounting, interviewing techniques, and law and evidence as they relate to financial investigations.

**CRLS 4400. Criminal Law and Procedure. 3 cr. hrs.**

Studies criminal substantive law; constitutional limits and principles of criminal law and liability; defenses to criminal liability; definitions and classification; criminal procedure of crimes; constitutional limits and protections of criminal procedure. Prereq: CRLS 1001 and CRLS 2500; or cons. of instr.

**CRLS 4500. Criminal Investigation. 3 cr. hrs.**

Fundamental principles and procedures of criminal investigation. Crime scene search and recording. Collection and preservation of physical evidence. Obtaining testimonial evidence.

**CRLS 4550. Crime Control. 3 cr. hrs.**

Contemporary issues in criminal justice and social control. Evaluates the effectiveness of various crime control strategies and explore their social utility and implications for social stratification. Discusses crucial socio-legal questions and philosophical debates concerning crime control policies.

**CRLS 4600. Evidence. 3 cr. hrs.**

Basic principles of the law of evidence. Presentation of oral and demonstrative evidence in the trial process. The quantum of proof in criminal proceedings.

**CRLS 4640. Family Violence and Public Intervention. 3 cr. hrs.**

Analysis of maltreatment of children, youth, spouses, and seniors within the family. Examination of causes and intervention methods emphasizing the response of actors and government agencies.

**CRLS 4660. Criminal Violence in America. 3 cr. hrs.**

Analysis of violent crime in American society and ways in which the criminal justice system responds to it. Examination of the causes of violent crime, its prevention, treatment and public policy ramifications. Historical and contemporary understanding of the significance of violence in American culture. Critical evaluation of methods utilized to deal with violent offenders.

**CRLS 4700. Ethics in Criminal Justice. 3 cr. hrs.**

An introduction to prevailing ethical controversies confronting the process and agencies of contemporary criminal justice. Special attention given to concrete ethical issues and dilemmas which are encountered regularly by participants in the major components of the criminal justice system: police, courts, and corrections. Prereq: CRLS 1001.

**CRLS 4931. Topics in Criminology and Law. 3 cr. hrs.**

Lectures and discussions in an area which, because of its topicality, is not the subject of a regular course. The special topics will be designated in the Schedule of Classes.

**CRLS 4986. Advanced Internship and Seminar in Criminology and Law Studies. 3 cr. hrs.**

Continuation of the internship experience (CRLS 3986). Placement is for a minimum of 140 hours per semester of supervised practice at the same agency as the previous semester and includes a weekly seminar with the internship coordinator. Credits earned cannot be counted toward the major. S/U grade assessment. Limited enrollment. Prereq: Sr. stndg., CRLS 3986 and cons. of internship coordinator.

**CRLS 4995. Independent Study in Criminology and Law Studies. 1-3 cr. hr.**

Readings and research on a particular problem or subject of interest to the student. Prereq: Cons. of instr. and cons. of dept. ch.

## English

### **ENGL 1001. Rhetoric and Composition 1. 3 cr. hrs.**

An introduction to the basic principles of rhetoric and composition. Investigation and practice of the methods of college writing.

### **ENGL 1002. Rhetoric and Composition 2. 3 cr. hrs.**

A further introduction to the principles of rhetoric and composition. Investigation and practice of the uses of the written language in exposition, persuasion, and critical analysis. Prereq: ENGL 1001 or equiv.

### **ENGL 1301. Honors English 1. 3 cr. hrs.**

A study of the ways in which human beings have fashioned imaginative works that reflect, challenge, and transfigure the worlds in which they live, with intensive analysis of texts selected from such writers as Chaucer, Dante, Homer, Marie de France, Milton, Sappho, Shakespeare, Sophocles, and Virgil. Strong emphasis placed on student writing. Prereq: Cons. of dept. ch. and cons. of program director. Limited to Honors Program students. Counts as equiv. of ENGL 2410 for English majors and minors.

### **ENGL 1302. Honors English 2. 3 cr. hrs.**

Continuation of ENGL 1301, with texts selected from such writers as Adams, Austen, the Brontes, Camus, Chopin, Dostoevsky, T.S. Eliot, Faulkner, Flaubert, Hemingway, Kafka, Keats, Melville, Morrison, Pope, Rhys, the Shelleys, Swift, Voltaire, Woolf, and Wordsworth. Strong emphasis placed on student writing. Prereq: Limited to Honors Program students. Counts as equiv. of ENGL 2420 for English majors and minors.

### **ENGL 2310. Introduction to Global Literature. 3 cr. hrs.**

Survey of selected works in English or in translation from non-Anglo-American cultural traditions. Texts can be drawn from African, Asian, European, Latin American and Middle Eastern literatures with a focus on interrelations among works in their historical and cultural contexts. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

### **ENGL 2410. Introduction to British Literature 1. 3 cr. hrs.**

An introductory survey of British literary traditions from the beginnings to the late 18th century. Approaches vary with instructor; authors likely to be studied include Behn, Carey, Chaucer, Marie de France, Fielding, Johnson, Lanyer, Milton, Pope, Shakespeare, Swift, and Wroth. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

### **ENGL 2420. Introduction to British Literature 2. 3 cr. hrs.**

Continuation of ENGL 2410, following the development of British literature from the late 18th century to the present. Approaches vary with instructor; authors studied are likely to include Austen, the Brontes, G. Eliot, Joyce, Shaw, the Shelleys, Tennyson, Woolf, and Wordsworth. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

### **ENGL 2510. Introduction to American Literature 1. 3 cr. hrs.**

An introductory survey of American literary traditions from the beginnings to the Civil War. Approaches vary with instructor; materials studied are likely to include early Native American oral traditions and works by authors such as Adams, Bradstreet, Child, Dickinson, Douglass, Emerson, Franklin, Hawthorne, Jacobs, Melville, Murray, Poe, Rowlandson, Stowe, Thoreau, Wheatley, and Whitman. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

### **ENGL 2520. Introduction to American Literature 2. 3 cr. hrs.**

Continuation of ENGL 2510, following the development of American literature from the Civil War to the present. Approaches vary with instructor; authors studied are likely to include Bishop, Cather, Chopin, T.S. Eliot, Ellison, Erdrich, Faulkner, Freeman, Frost, Gilman, Hemingway, Hughes, Hurston, James, Jewett, Morrison, O'Connor, Pound, Stein, Twain, Wharton, and Wright. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

**ENGL 2710. Introduction to Literature: Fiction. 3 cr. hrs.**

An introduction to various types of fiction (e.g., fable, short story, novel) representing a range of cultural perspectives with emphasis on techniques for analyzing the conventions, structures, and styles of fiction. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

**ENGL 2720. Introduction to Literature: Drama. 3 cr. hrs.**

An introduction to the forms and principles of drama, often surveying its development from its origins in ancient Greece to the contemporary theater, with emphasis on techniques for analyzing the conventions, structures, and styles of dramatic literature. Class will typically read works from a number of centuries and study authors from continental, British, and American traditions. Class usually includes at least one play by Shakespeare. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

**ENGL 2730. Introduction to Literature: Poetry. 3 cr. hrs.**

An introduction to poetry from a variety of traditions. Emphasis on close reading of poems to learn how formal techniques of verse (e.g., symbolism, metaphor, simile, imagery, persona, meter, rhythm) combine for poetic effect. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

**ENGL 2740. Reading Film as Narrative. 3 cr. hrs.**

An introductory survey on approaches to film appreciation, stressing methods for analyzing and interpreting how complex verbal and non-verbal representations establish characterizations, structure narratives, and engage important ideas and events. Topical emphasis will vary with instructor, but may include central theories of film interpretation, attention to the history of the cinema, and the integration of specific films into their cultural context. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

**ENGL 2931. Topics in Literature and Culture. 3 cr. hrs.**

A thematically-focused introduction to literature, wherein students learn about literary forms and history, master analytical skills, and improve their critical writing. Course emphasis varies, but could focus on such topics as Literature and Social Justice, Literature and Ethics, Literature and Religion, Literature and Science, Literature and Art, etc. Readings are typically drawn from the British, American, or Anglophone traditions, reflecting various genres and periods. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

**ENGL 3210. Advanced Composition. 3 cr. hrs.**

Analytical reading and sustained practice in techniques for effective nonfiction writing for a variety of audiences and purposes in a number of genres including essays, personal narrative, and public argument. Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.

**ENGL 3220. Writing for the Professions. 3 cr. hrs.**

Analysis of and practical solutions for the rhetorical problems encountered in workplace writing. Students learn how to design documents and revise for style with emphasis on analyzing audiences and purposes. Applications may include resumes, letters, memos, reports, visual aids, and oral presentations. Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.

**ENGL 4027. Teaching English in the Secondary School. 3 cr. hrs.**

An investigation of the role of the teacher, the student, and the curricular methods, procedures, and materials used in the teaching of language, literature, and composition in the secondary school. A 40-hour field experience in selected area schools is required. Prereq: Jr. stdng. and EDUC 2227; admission to the College of Education. May not be counted as Literature requirement in Arts and Sciences Curriculum or toward thirty credits required for an M.A. or Ph.D. degree in English.

**ENGL 4110. English Linguistics. 3 cr. hrs.**

An introduction to linguistics that concentrates on English. Topics include language acquisition, grammatical structure, social and regional variation, historical change, and pragmatics. Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.

**ENGL 4120. Structure of the English Language. 3 cr. hrs.**

A study of the structure of the English language with emphasis on parts of speech; the phoneme and morpheme as structural units; and analysis of modern English syntax by traditional, structural, immediate constituent, and generative-transformational methods. Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.

**ENGL 4130. History of the English Language. 3 cr. hrs.**

A study of the history of the English language with emphasis on elementary phonology, morphology, and syntax through the stages of Old, Middle, and Modern English. Dialectology, sources of vocabulary, and characteristics of contemporary American English are also considered. Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.

**ENGL 4170. Studies in Language. 3 cr. hrs.**

A detailed study of some aspect of language or language study, including stylistics, sociolinguistics, introductory linguistics, Old English, or semiotics. Consult Schedule of Classes or the English Department's Web site for the specific topic. Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.

**ENGL 4210. The Processes of Writing. 4 cr. hrs.**

A study of the theoretical and practical aspects of the nature and development of composing processes. Topics include prewriting and revision, current rhetorical theory and its historical antecedents, strategies for designing and sequencing writing assignments, and responding to others' writing. A quarter of course work is devoted to experience of peer-tutoring in Writing Center. Students who take this course can apply to be tutors in the Ott Memorial Writing Center. Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.

**ENGL 4220. The Art of Rhetoric: Theory and Application. 3 cr. hrs.**

A study of definitions of rhetoric; rhetorical analysis of texts and culture; critique of classical and contemporary theories of rhetoric; consideration of invention, arrangement, style, ethos, audience, and evidence. Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.

**ENGL 4250. Creative Writing: Fiction. 3 cr. hrs.**

A study in the writing of fiction with an emphasis on the analysis of craft and technique in student and published writing. Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.

**ENGL 4260. Creative Writing: Poetry. 3 cr. hrs.**

A study in the writing of poetry with an emphasis on the analysis of craft and technique in student and published writing. Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirements in Arts and Sciences College Curriculum.

**ENGL 4310. Studies in Global Literature. 3 cr. hrs.**

An in-depth exploration of selected works in English or in translation from non-Anglo-American cultural traditions. Texts can be drawn from African, Asian, European, Latin American and Middle Eastern literatures with an emphasis on historical, intellectual and/or cultural contexts. Course focus can vary with instructor. Consult the English Department's web site for specific topic. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4410. British Literature to 1500. 3 cr. hrs.**

A reading of medieval works from the Old and Middle English periods, with emphasis on both literary and cultural issues. Typical readings include lyrics, romances, *The Pearl*, *Sir Gawain*, and *Piers Plowman*, and works by Gower, Kempe, and Malory. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4420. Renaissance Literature: The 16th Century. 3 cr. hrs.**

A study of Tudor poetry, drama, and prose, with emphasis on literary and cultural issues of the Elizabethan period. Writers considered might include Lodge and More (prose); Shakespeare, Philip and Mary Sidney, Spenser, and Wyatt (lyric and narrative poetry); and Carey, Kyd, and Marlowe (drama). Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4430. Renaissance Literature: The 17th Century. 3 cr. hrs.**

A study of English poetry, drama and prose from 1603 to the beginnings of the neoclassical period. Writers considered might include Donne, Herbert, Herrick, Jonson, and Marvell (lyric); Bacon and Wroth (prose); and Jonson, Middleton, and Webster (drama). Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4440. The Ages of Dryden and Pope: 1660-1744. 3 cr. hrs.**

A study of the prose, poetry, and drama of the Restoration to early 18th century, featuring such writers as Behn, Dryden, Pope, and Swift within the historical, literary, and intellectual contexts of the era. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4450. The Age of Johnson: 1744-1790. 3 cr. hrs.**

A study of the prose, poetry, and drama of the later 18th century, featuring such writers as Boswell, Burney, Fielding, Johnson, and Sterne within the historical, literary, and intellectual contexts of the era. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4460. The Romantic Period: 1790-1837. 3 cr. hrs.**

A study of the poetry, drama, and fiction of the period with emphasis on the works of Austen, Blake, Byron, Coleridge, Keats, the Shelleys, Smith, and Wordsworth. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4470. Victorian Literature. 3 cr. hrs.**

A study of the major poets and prose writers between 1837 and 1900, including such authors as Arnold, the Brontes, the Brownings, Carlyle, Dickens, G. Eliot, Hardy, Newman, Ruskin, and Tennyson. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4480. The Modernist Period in British Literature. 3 cr. hrs.**

A study of selected works from authors whose writings exemplify the Modernist Movement in British literature such as Compton-Burnett, Eliot, Ford, Forster, Joyce, D.H. Lawrence, Mansfield, Rhys, Sackville-West, Sitwell, Wilde, Woolf, and Yeats. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4490. The Postmodernist Period in British Literature. 3 cr. hrs.**

A study of selected works from authors whose writings exemplify the Postmodernist Movement in British literature such as Adcock, Auden, Beckett, Desai, Drabble, Gordimer, Heaney, Joyce, Lessing, O'Brien, Pinter, Stoppard, and Woolf. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4510. Colonial and American Literature from the Beginnings to 1798. 3 cr. hrs.**

A study of the forms of colonial and indigenous cultural expression, the literature of the Revolutionary War and the early republic, and the emergence of a national literature. Writers studied may include Bradstreet, Edwards, Equiano, Franklin, Irving, Mather, Rowson, Taylor, and Wheatley. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4520. American Literature from 1798 to 1865. 3 cr. hrs.**

A study of the literature and culture of the early-to-mid 19th century, including the periods of the American Renaissance and the Civil War. Writers studied may include Alcott, Child, Cooper, Dickinson, Douglass, Emerson, Fuller, Hawthorne, Melville, Poe, Stowe, Thoreau, and Whitman. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4530. American Literature from 1865 to 1914. 3 cr. hrs.**

A study of late 19th-century literature and culture with emphasis on the rise of realism to the beginnings of modernism. Writers studied generally include Chesnutt, Chopin, Crane, Dickinson, Dreiser, Harper, James, Twain, and Wharton. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4550. Twentieth-Century American Literature: The Modern Period. 3 cr. hrs.**

A study of American literature of the early twentieth century with particular attention to the formal experiments of modernism. Writers studied generally include Cather, T.S. Eliot, Faulkner, Fitzgerald, Frost, Hemingway, Hurston, Larsen, Stein, Stevens, Williams, and Wright. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4560. The Contemporary Period in American Literature: 1945 to Present. 3 cr. hrs.**

A study of fiction, poetry, and/or drama written since WWII, with attention to the shift from modernism to postmodernism. Approaches vary with instructor. Authors studied are likely to include Albee, Barth, Bellow, Bishop, Carver, DeLillo, Didion, Erdrich, Graham, Heller, Kingston, Levine, Morrison, O'Connor, Ozick, Pynchon, Roth, Stone, Walker, and White. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4610. Individual Authors. 3 cr. hrs.**

Studies of the works of selected individual authors, usually within biographical, historical, intellectual, and/or cultural contexts. Authors studied have included Austen, the Brontes, the Brownings, Cheever and Carver, Conrad, Frost, Hardy and Hopkins, Heaney, Melville, Morrison, Wharton and Stein, and Yeats. Consult Schedule of Classes or the English Department's Web site for specific author(s). Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4620. Chaucer. 3 cr. hrs.**

A study of Chaucer's works with emphasis on his techniques, thematic concerns, cultural contexts, and place in literary history. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4630. Shakespeare's Major Plays. 3 cr. hrs.**

A detailed analysis of a selection of Shakespearean drama with emphasis given to Shakespeare's development as a dramatist within his historical and intellectual context. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4640. Milton. 3 cr. hrs.**

A study of Milton's major poetry and prose in the context of his place in 17th-century England. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4710. Studies in Genre. 3 cr. hrs.**

Advanced study of a particular genre and its ability to articulate meaning in historical, social, and/or literary contexts. Past offerings have included Romance and Epic in Early Modern England, the Family Novel, the Novella, the Epic, the Court Romance, and the American Western. Consult Schedule of Classes or the English Department's Web site for specific topic. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4720. Literary Criticism. 3 cr. hrs.**

An introduction to a variety of literary critical methods ranging from New Criticism to Cultural Studies with emphasis on premises and methods of criticism, exercises in practical criticism, and application of theory to analysis of literary works. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4750. American Drama. 3 cr. hrs.**

A study of American drama with emphasis on form and function of the genre. Course emphasis and authors taught can vary with instructor. Consult Schedule of Classes or the English Department's Web site for specific topic. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4760. British Drama. 3 cr. hrs.**

A study of British drama with emphasis on form and function of the genre. Course emphasis and authors taught can vary with instructor. Consult Schedule of Classes or the English Department's Web site for specific topic. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4780. Literature in Film. 3 cr. hrs.**

Topics vary according to instructor, but past offerings have included Contemporary Irish Literature and Film, Shakespeare and Film, Ethnic Literature and the Movies, Postmodern Literature and Film, Film Noir and the Detective Novel. Consult Schedule of Classes or the English Department's Web site for specific topic. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4800. Studies in Literature and Culture. 3 cr. hrs.**

An investigation of the relation between literature and its culture from a variety of perspectives that might include the historical, political, or anthropological. Past offerings have included the English Urban Novel, Catholicism and Literature, and Texts, Audiences, and Social Change. Consult Schedule of Classes or the English Department's Web site for specific topic. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4810. Race, Ethnicity, and Identity in American Literature and Culture. 3 cr. hrs.**

A study of literary works by authors who identify with a range of different ethnic groups (e.g., African American, Asian American, Chicano/a, Jewish, Native American) in conjunction with application of classic and contemporary ethnicity theory. Writers studied generally include Cahan, Ellison, Inada, Kingston, Larsen, Momaday, Morrison, Rodriguez, Roth, Silko, Toomer, and Yamamoto. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4820. Studies in Race and/or Ethnic Literature. 3 cr. hrs.**

Topics vary according to instructor but may include ethnic autobiography, African American narrative, the Harlem Renaissance, Native American oral tradition, Asian American literature, etc. Consult Schedule of Classes or the English Department's Web site. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4830. African-American Literature. 3 cr. hrs.**

A study of major works of fiction, poetry, autobiography, and drama by African American authors writing from slavery through the present day. Works are usually situated within their historical, biographical, intellectual and cultural contexts. Authors studied generally include Baldwin, Douglass, DuBois, Dunbar, Ellison, Hansberry, Hurston, Jacobs, Kincaid, Morrison, Walker, Washington, Wideman, Wilson and Wright. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4840. Post-Colonial Literature. 3 cr. hrs.**

A study of developing national literatures in Africa, Australia, the Caribbean, and Southeast Asia after the collapse of the British Empire in the 1950s. Writers studied may include Achebe, Aidoo, Coetzee, Harris, Ishiguro, Kincaid, Lamming, Mudrooroo, Ngugi, Rushdie, and Walcott. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4860. Survey of Women's Literature. 3 cr. hrs.**

A study of selected female authors that addresses their distinctive social and aesthetic concerns, with emphasis on the range of critical methods instrumental to feminist literary criticism (e.g., historicism, archetypal criticism, psychoanalysis). Authors studied vary by instructor but may include Austen, the Brontes, Burney, G. Eliot, Julien of Norwich, Kempe, Morrison, O'Connor, Shelley, Silko, Woolf, and Wroth. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4870. Studies in Women and Literature. 3 cr. hrs.**

Topics vary according to instructor, but past offerings have included Multicultural Women's Autobiography, the Sentimental Novel, Fictions of Domesticity, Women's Writing in the Renaissance, Romanticism and Gender, the Female Gothic, and Black Women's Writing. Consult Schedule of Classes or the English Department's Web site for specific topic. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4931. Topics in Literature or Writing. 3 cr. hrs.**

Topics vary according to instructor, but past offerings have included the Bible as Literature, Literary Responses to the Viet Nam War, Literature and the Environment, Literature of the Holocaust, the Vikings, and Meaning and Identity. Consult Schedule of Classes or the English Department's Web site for specific topic. Prereq: UCCS R and LPA requirements fulfilled. If topic is in writing, may not be counted as Literature requirement in Arts and Sciences College Curriculum.

**ENGL 4953. Seminar in Literature. 3 cr. hrs.**

Advanced practice in the techniques and discipline of intensive literary study. Consult Schedule of Classes or the English Department's Web site. Prereq: UCCS R and LPA requirements fulfilled.

**ENGL 4954. Seminar in Writing. 3 cr. hrs.**

Advanced practice in the techniques and discipline of writing. Offered in fiction, in poetry and in nonfiction. Consult Schedule of Classes or the English Department's web site for specific genre. Prereq: UCCS R and LPA requirements fulfilled and cons. of instr. May not be counted as Literature requirement in Arts and Sciences College Curriculum.

**ENGL 4986. Writing Internship. 3 cr. hrs.**

On-the-job experience as writer and/or editor for a local agency; supervised by the agency and by English faculty. Although course is graded S/U, it counts toward the major or minor. May be taken only once. Guidelines and forms available in English Department office. S/U grade assessment. Prereq: UCCS R and LPA requirements fulfilled and cons. of instr. May not be counted as Literature requirement in Arts and Sciences College Curriculum.

**ENGL 4995. Independent Study in English. 3 cr. hrs.**

Independent study with a specific faculty member intended to allow student to pursue topics not typically offered in the curriculum; thus, independent studies are not ordinarily allowed on material already addressed by other courses. Prereq: UCCS R and LPA requirements fulfilled, cons. of instr., and cons. of dept. ch.

**ENGL 4999. Senior Thesis. 1-3 cr. hr.**

Concentrated and independent study with a specific faculty member intended to allow the student to write a 40-60 page senior thesis on specific topic of interest to student. Prereq: UCCS R and LPA requirements fulfilled, cons. of instr., and cons. of dept. ch.



## English as 2nd Language

### **ESLP 1021. Composition. 3 cr. hrs.**

Develops strategies and skills necessary for successful academic writing. Reviews the fundamentals of paragraph writing and introduces students to writing academic research papers. If required to take both ESLP 1021 and ENGL 1001, a student must take ESLP 1021 first before enrolling in ENGL 1001 (ESLP section) and ESLP 1025. May not register as audit or S/U option. Prereq: Cons. of instr.

### **ESLP 1025. Rhetoric and Composition 1 for Non-Native Speakers. 2 cr. hrs.**

Provides instruction and practice in using standard U.S. grammar, punctuation and mechanics in academic writing. Targets areas that typically remain problematic for advanced ESL writers. May not register as audit or S/U option. Prereq: Cons. of instr. and must be taken concurrently with an ESLP section of ENGL 1001.

### **ESLP 1031. Reading. 3 cr. hrs.**

Develops strategies and skills necessary for successful academic reading. Provides practice with reading comprehension, vocabulary development, critical thinking and reading study skills. May not register as audit or S/U option. Prereq: Cons. of instr.

### **ESLP 1041. Listening Comprehension. 3 cr. hrs.**

Develops strategies and skills necessary for successful listening and speaking in academic settings. Focuses on listening to lectures and news broadcasts, and listening and speaking in group discussions and everyday interactions. May not register as audit or S/U option. Prereq: Cons. of instr.

## Foreign Language

### **FOLA 3210. Women in Foreign Literature. 3 cr. hrs.**

Focus on a major area of literary study concerned with women writers and/or women's issues in foreign literatures. Taught in English, knowledge of a foreign language not required. Counts toward Women's Studies; may not be counted toward fulfillment of the foreign language requirement.

### **FOLA 4000. Teaching World Languages and Cultures. 4 cr. hrs.**

Study and application of the fundamental principles of effective second language instruction through the exploration of second language acquisition theory, the development of skills for selecting, organizing, providing, and assessing effective second language learning opportunities; practice of instructional technique within clinical contexts; and reflection on teaching performance. Clinical experience requirement: three hours per week for a total of forty hours. Required of all Education majors. Prereq: Sr. stdng. and intermediate high performance on an official Oral Proficiency Interview or cons. of dept. ch.

### **FOLA 4931. Topics in Foreign Language, Culture and Literature. 1-3 cr. hr.**

An umbrella course to offer occasional cross-language topics in English about languages, literatures and cultures taught in the Department.

### **FOLA 4960. Undergraduate Seminar in Foreign Languages and Literatures. 1-3 cr. hr.**

Designed to initiate qualified undergraduates in the techniques and discipline of scholarly literary or linguistic research by concentrated work in an interdisciplinary field. Emphasis on the critical reading and analysis of primary and/or secondary sources in English translation. Specific subjects of seminar to be announced. Does not count toward fulfillment of academic major or minor. Prereq: Sr. stdng. or cons. of dept. ch.

### **FOLA 4995. Independent Study in Foreign Languages and Literatures. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

## French

### **FREN 1001. Elementary French 1. 4 cr. hrs.**

Introduction to the French language. Fundamentals of comprehension, speaking, reading and writing. Open to students with no previous study of French; or by departmental placement.

### **FREN 1002. Elementary French 2. 4 cr. hrs.**

Continuation of FREN 1001, plus supplementary reading. Prereq: FREN 1001.

### **FREN 2001. Intermediate French 1. 3 cr. hrs.**

Grammar review, oral and written practice, and more intensive reading. Prereq: FREN 1002; or by departmental placement.

### **FREN 2002. Intermediate French 2. 3 cr. hrs.**

Continuation of FREN 2001. Prereq: FREN 2001.

### **FREN 2003. Intensive Intermediate French. 4 cr. hrs.**

Selective grammar review with conversation and extensive reading. Aimed to give qualified students the opportunity to complete their foreign language requirement in one term. Prereq: FREN 1002 with minimum grade of AB, or by departmental placement.

### **FREN 3001. Writing Skills in French. 3 cr. hrs.**

Development of effective writing proficiency in French for a variety of contexts (descriptions; explanations; letters; e-mails; and papers) with review of linguistic and grammatical structures. Prereq: FREN 2002, FREN 2003; or by departmental placement.

### **FREN 3002. Conversational Skills in French. 3 cr. hrs.**

Development of culturally, socially and contextually appropriate conversational skills (oral and aural) about a variety of topics with a focus on linguistic accuracy and fluency. May be taken concurrently with FREN 3001. Prereq: FREN 2002, FREN 2003; or cons. of dept ch.

### **FREN 3100. Advanced Composition and Conversation in French. 3 cr. hrs.**

Advanced study of oral and written French. Emphasis on idiomatic fluency. Offered annually. Prereq: FREN 3001 and FREN 3002; or cons. of dept. ch.

### **FREN 3120. French Phonetics. 3 cr. hrs.**

Offers an understanding and practice of the basic pronunciation rules of Standard French; the articulation of individual sounds, sound groupings, and speech patterns. Prereq: FREN 3002; or cons. of dept. ch.

### **FREN 3200. Contributions of the French and Francophone World. 3 cr. hrs.**

Social, institutional, intellectual and artistic contributions of the French and Francophone world. Taught in English. Knowledge of French not required. May not be counted toward fulfillment of foreign language requirement.

### **FREN 3210. French and Francophone Literature in English Translation. 3 cr. hrs.**

Readings in English translation of selected masterpieces of French and Francophone literature. Knowledge of French is not required. May not be counted toward fulfillment of teaching major. May be counted as part of the Arts and Sciences literature college requirement but not as part of the foreign language requirement.

### **FREN 3300. French Civilization. 3 cr. hrs.**

Historical development of the social, institutional, intellectual, and artistic life of France from inception to the present. Prereq: FREN 3001 or cons. of dept. ch.

### **FREN 3310. Francophone Civilizations and Cultures. 3 cr. hrs.**

Historical, social, institutional, intellectual, and artistic contributions of Francophone cultures throughout the world including Europe, Africa, North America, the Caribbean and Asia. Prereq: FREN 3001; or cons. of dept. ch.

**FREN 3320. Contemporary Issues in the Francophone World. 3 cr. hrs.**

Focuses on the study of current topics, preoccupations, trends and issues pertaining to various Francophone societies of today in areas such as religion, educational reforms, ethnicity, race, identity, social stratification and economic development. Prereq: FREN 3001; or cons. of dept. ch.

**FREN 3500. Introduction to Textual Analysis in French. 3 cr. hrs.**

A survey of major genres, styles, and periods of French and Francophone literature designed to prepare students for upper level literature courses with a focus on interpretation of poetry, theater, prose, and contemporary press. May be counted as part of the Arts and Sciences literature curriculum requirement. Prereq: 3001; or cons. of dept. ch.

**FREN 3600. French and Francophone Film or Theatre. 3 cr. hrs.**

The examination and analysis of French and Francophone film or theatre in relation to thematic motifs. Prereq: FREN 3500; or cons. of dept. ch.

**FREN 3610. Contemporary French Canada. 3 cr. hrs.**

After a brief historical summary, this course focuses on contemporary Quebec. Exploration of poetry, novels, plays, films, and songs leads to an understanding of "Quebecois" and "Acadian" identity. Prereq: FREN 3500; or cons. of dept. ch.

**FREN 3700. French for the Professions. 3 cr. hrs.**

An introduction to French terminology and practice in such fields as business, journalism, communications, etc. Prereq: FREN 3001 and FREN 3002; or cons. of dept. ch.

**FREN 3705. Advanced French for the Professions. 3 cr. hrs.**

Advanced French for international business in the French-speaking world. Prereq: FREN 3700; or cons of dept. ch.

**FREN 4110. Advanced Grammar and Syntax in French. 3 cr. hrs.**

Examines advanced structures, forms, and style of the French language through contextual practice. Prereq: FREN 3001 and FREN 3002; or cons. of dept. ch.

**FREN 4500. The Middle Ages in France: 1050-1450. 3 cr. hrs.**

Major aspects of the period through literature, the arts, and film (in modern French). Prereq: FREN 3500 or cons. of dept. ch.

**FREN 4510. Sixteenth Century French Literature. 3 cr. hrs.**

Major aspects of the Renaissance in France through literature, the arts, and film. Prereq: FREN 3500; or cons. of dept. ch.

**FREN 4520. Seventeenth Century French Literature. 3 cr. hrs.**

Major aspects of French Classicism through literature, the arts, and film. Prereq: FREN 3500; or cons. of dept. ch.

**FREN 4530. Eighteenth Century French Literature. 3 cr. hrs.**

Major aspects of the Enlightenment through literature, the arts, and film. Prereq: FREN 3500; or cons. of dept. ch.

**FREN 4540. Nineteenth Century French Literature. 3 cr. hrs.**

Major aspects of the 19th Century in France through literature, the arts, and film. Prereq: FREN 3500; or cons. of dept. ch.

**FREN 4550. Twentieth and Twenty-First Century French Literature. 3 cr. hrs.**

Major aspects of the period through French and Francophone literature, the arts, and film. Prereq: FREN 3500; or cons. of dept. ch.

**FREN 4931. Topics in French Language, Culture and Literature. 1-3 cr. hr.**

Topics vary. Subject to be announced. Prereq: FREN 3500; or cons. of dept. ch.

**FREN 4995. Independent Study in French. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

**FREN 4999. Senior Thesis in French. 2 cr. hrs.**

Introductory thesis guidance for approved students under the direction of a departmental adviser. Prereq: Cons. of dept. ch.

## Greek

**GREK 1001. Elementary Greek 1. 4 cr. hrs.**

Morphology and syntax of Attic Greek of the 5th-4th centuries B.C., the basis for all later literary dialects, such as Hellenistic and Koine (the language of the New Testament), and extending into the Byzantine period. Grammar exercises and readings of original texts. Open to students with no previous study of Greek or by departmental placement.

**GREK 1002. Elementary Greek 2. 4 cr. hrs.**

Continuation of GREK 1001. Exercises in Attic Greek morphology and syntax. Composition in Ancient Greek. Development of translation and comprehension abilities with extensive reading from original texts of Aristophanes, Demosthenes, and the New Testament. Prereq: GREK 1001.

**GREK 2001. Intermediate Greek 1. 3 cr. hrs.**

Review of Greek morphology and syntax, with connected readings from Greek prose authors including Plato. Prereq: GREK 1002; or by departmental placement.

**GREK 2002. Intermediate Greek 2. 3 cr. hrs.**

Extensive readings in Greek from Homer's Iliad and Odyssey. Background readings and discussions on the nature of oral epic, the Mycenaean world, and the archaeological evidence for the Trojan War. Study of dactylic hexameter meter and metrical reading of Homeric lines. Prereq: GREK 2001; or by departmental placement.

**GREK 3500. Studies in Classical Greek Literature. 1-3 cr. hr.**

Variable readings in Classical Greek literature. May be repeated when course content is different. Prereq: GREK 2002; or cons. of dept. ch.

**GREK 4931. Topics in Greek Language, Culture and Literature. 1-3 cr. hr.**

Topics vary. Subject to be announced. Prereq: Sr. stndg. or cons. of dept. ch.

**GREK 4995. Independent Study in Greek. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

## German

**GRMN 1001. Elementary German 1. 4 cr. hrs.**

Introduction to the German language. Fundamentals of comprehension, speaking, reading and writing. Open to students with no previous study of German; or by departmental placement.

**GRMN 1002. Elementary German 2. 4 cr. hrs.**

Continuation of GRMN 1001, plus supplementary reading. Prereq: GRMN 1001.

**GRMN 2001. Intermediate German 1. 3 cr. hrs.**

Grammar review, oral and written practice, and more intensive reading. Prereq: GRMN 1002; or by departmental placement.

**GRMN 2002. Intermediate German 2. 3 cr. hrs.**

Continuation of GRMN 2001, plus supplementary reading. Prereq: GRMN 2001.

**GRMN 2003. Intensive Intermediate German. 4 cr. hrs.**

Selective grammar review with conversation and extensive reading. Aimed to give qualified students the opportunity to complete their foreign language requirement in one term. Prereq: GRMN1002 with minimum grade of AB; or by departmental placement.

**GRMN 2050. Conversational German. 1 cr. hr.**

Students meet once weekly for guided conversation on contemporary topics. May be taken up to three times. Does not count toward the German major or minor. S/U grade assessment. Prereq: GRMN 2002 or GRMN 2003.

**GRMN 3001. German Composition and Conversation. 3 cr. hrs.**

Practice in the oral and written use of the German language. Prereq: GRMN 2002, GRMN 2003; or by departmental placement.

**GRMN 3030. Intensive Critical Reading in German. 3 cr. hrs.**

Intensive practice in comprehending unedited German prose, with primary emphasis on texts since the Enlightenment. Vocabulary enhancement. May not be counted as part of the Arts and Sciences literature curriculum requirement. Prereq: GRMN 2002 or GRMN 2003; or cons. of dept. ch.

**GRMN 3100. Advanced German Composition and Conversation. 3 cr. hrs.**

Practice and review of advanced grammatical structures of the German language for further development of oral and written communication skills. Prereq: GRMN 3001; or cons. of dept. ch.

**GRMN 3120. German Phonetics and Advanced Speaking Practice. 3 cr. hrs.**

German sounds and speech patterns. Prereq: GRMN 3001; or cons. of dept. ch.

**GRMN 3200. German Contributions to Western Civilization. 3 cr. hrs.**

Readings in English translation dealing with the culture and civilization of German speaking countries. Knowledge of German not required.

**GRMN 3210. German Literature in English Translation. 3 cr. hrs.**

Readings in English translation of principal authors from the Middle Ages to the present day. Knowledge of German not required. May be counted as part of the Arts and Sciences literature requirement but not as part of the foreign language requirement.

**GRMN 3500. The Modern German Short Story. 3 cr. hrs.**

An introduction to textual analysis and interpretation concentrating on the German short story in historical and cultural context. Prereq: GRMN 3030; or cons. of dept. ch.

**GRMN 3510. Thematic Surveys in German Literature. 3 cr. hrs.**

Survey of selected themes, forms, or periods in German literature. Subject to be announced. May be repeated for credit when the topic varies. Prereq: GRMN 3500; or cons. of dept. ch.

**GRMN 3700. German for the Professions. 3 cr. hrs.**

An introduction to German terminology and practice in such fields as business, journalism, communications, etc. Prereq: GRMN 3001; or cons. of dept. ch.

**GRMN 4110. Advanced German Grammar. 3 cr. hrs.**

Grammatical structure of the German language in context with other linguistic areas. Prereq: GRMN 3001; or cons. of dept. ch.

**GRMN 4505. German Drama. 3 cr. hrs.**

Significant German drama from Lessing to the present. Prereq: GRMN 3500; or cons. of dept. ch.

**GRMN 4515. The German Novelle. 3 cr. hrs.**

Novelle: the genre and representative works.  
Prereq: GRMN 3500; or cons. of dept. ch.

**GRMN 4525. German Literature: Twelfth to the Eighteenth Century. 3 cr. hrs.**

Principal works of the Medieval, Renaissance, and Baroque periods in German literature. Prereq: GRMN 3500; or cons. of dept. ch.

**GRMN 4530. Eighteenth Century German Literature. 3 cr. hrs.**

Authors and works of the Enlightenment, Storm and Stress, and Classicism, including Goethe's late works. Prereq: GRMN 3500; or cons. of dept. ch.

**GRMN 4540. Nineteenth Century German Literature. 3 cr. hrs.**

Romanticism and Realism in German literature. Prereq: GRMN 3500; or cons. of dept. ch.

**GRMN 4550. Twentieth and Twenty-First Century German Literature. 3 cr. hrs.**

Study of German authors and works of such periods as Naturalism, Neo-Romanticism, Expressionism through the most current literary trends. Prereq: GRMN 3500; or cons. of dept. ch.

**GRMN 4931. Topics in German Language, Culture and Literature. 1-3 cr. hr.**

Topics vary. Subject to be announced. Prereq: Sr. stndg. or cons. of dept. ch.

**GRMN 4961. Workshop in German/English Translation. 1-3 cr. hr.**

A Practical workshop to familiarize advanced students with the problems of and processes required in translating from German to English. Different non-literary texts supplied by outside sources will be assigned to each student. Discussions will involve general principles of translating, as well as text-specific problems. Prereq: Cons. of instr.

**GRMN 4995. Independent Study in German. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

**GRMN 4999. Senior Thesis in German. 2 cr. hrs.**

Introductory thesis guidance for approved students under the direction of a departmental adviser. Prereq: Cons. of dept. ch.

## History

**HIST 1001. Growth of Western Civilization to 1715. 3 cr. hrs.**

An interpretative survey of Western Civilization from its beginnings to the Early Modern period.

**HIST 1002. Growth of Western Civilization since 1715. 3 cr. hrs.**

An interpretative survey of Western Civilization from the Early Modern period to the contemporary era.

**HIST 1101. Introduction to American History. 3 cr. hrs.**

A survey of American history from the colonial origins to the present.

**HIST 1201. History of Western Art 1. 3 cr. hrs.**

Historical survey of painting, sculpture, architecture, and the minor arts representative of the main contributions of western civilization. Illustrated lectures and discussions: Prehistory, the Ancient Near East, Greco-Roman Antiquity through the Middle Ages. Does not count toward history major or minor.

**HIST 1202. History of Western Art 2. 3 cr. hrs.**

Historical survey of painting, sculpture, architecture, and the minor arts representative of the main contributions of western civilization. Illustrated lectures and discussions: Renaissance and Modern, to the present. Does not count toward history major or minor.

**HIST 1301. Survey of Latin America. 3 cr. hrs.**

Survey of Latin American history and culture from pre-Columbian times to the present, emphasizing the historical development of modern traditions, such as multi-ethnic identities and political authoritarianism, and the skills and sources for doing Latin American history.

**HIST 1401. Africa. 3 cr. hrs.**

Survey of African peoples and cultures, including the Sudanic empires, Islamic influences, European colonialism, and national independence, that also emphasizes the skills and sources for doing African history.

**HIST 1501. East Asia. 3 cr. hrs.**

Survey of major political, social and economic themes in Chinese and Japanese cultures from ancient times to the present, emphasizing major cultural and historical events which have significantly influenced the development of Asian civilization and the skills and sources for doing Asian history.

**HIST 2101. Growth of the American Nation 1. 3 cr. hrs.**

The United States from colonial origins through the Civil War era, with consideration of political, cultural, and economic institutions and ideas.

**HIST 2102. Growth of the American Nation 2. 3 cr. hrs.**

The United States from the Civil War era to the present, with consideration of political, cultural, and economic institutions and ideas.

**HIST 3101. The British Atlantic World to 1713. 3 cr. hrs.**

The founding of colonies from Newfoundland to Virginia to Barbados, the transformation of landscapes, the struggle to create viable societies, the development of political and social institutions, relations between church and state, attempts to centralize control of the colonies, the Indian Wars, the rise of African slavery.

**HIST 3102. Revolutionary America: 1707-1787. 3 cr. hrs.**

The development of an American nationality, international wars on the North American continent and in the West Indies, imperial reform, the Loyalist response, the causes and consequences of the War for Independence, the Articles of Confederation. Prereq: Soph. stdng.

**HIST 3103. The New American Nation, 1787-1836. 3 cr. hrs.**

The reasons for the independence movement, the hopes and failures of the founding generation, the debates over the Constitution, the roots of an American empire, westward expansion, slavery, the rise of democracy, the formation of a distinctly American identity and culture, and the endless optimism of the young republic. Prereq: Soph. stdng.

**HIST 3104. The Civil War Era. 3 cr. hrs.**

An examination of American history from 1831-1877, focusing on the political, social, economic, and cultural differences between the North and the South. Includes discussions of the black experience during the Civil War era, of military events during the War itself, and of the resolution or continuation of sectional tensions through Reconstruction. Prereq: Soph. stdng.

**HIST 3106. Gilded Age to the Progressive Era, 1876-1920. 3 cr. hrs.**

United States history from the end of the Civil War to World War I, emphasizing America's shift from an agrarian country to an urban, industrial, and imperial nation. Prereq: Soph. stdng.

**HIST 3107. United States in the Twentieth Century 1. 3 cr. hrs.**

The United States since 1900, emphasizing the Progressive Movement, the New Deal, the role of the United States in world affairs, and the role of the presidency and intelligence community. Prereq: Soph. stndg.

**HIST 3108. United States in the Twentieth Century 2. 3 cr. hrs.**

The United States since 1900, emphasizing the Progressive Movement, the New Deal, the role of the United States in world affairs, and the role of the presidency and intelligence community. Begins with World War II. Prereq: Soph. stndg.

**HIST 3118. American Military History. 3 cr. hrs.**

The nature and history of the military in the United States from the American Revolution to the present, with emphasis on its role and significance in American life and foreign affairs. Prereq: Soph. stndg.

**HIST 3127. The Vietnam War Era. 3 cr. hrs.**

Examination of the political, social, cultural, and military history of both the Vietnamese and American sides of the war in Vietnam. Prereq: Soph. stndg.

**HIST 3165. History of Rock and Roll. 3 cr. hrs.**

Examination of rock and roll as a political, social, and economic as well as cultural allegory for twentieth-century American history. Special attention is given to artists who epitomized styles or genres. Prereq: Soph. stndg.

**HIST 3201. Ancient Greece and Rome. 3 cr. hrs.**

The course traces Greek history from the Minoans and Mycenaeans to the Hellenistic world, with stress on politics, literature and art; the rise of Rome, the decay of the Roman republic, the high civilization of the Emperors, the rise of Christianity, and the Fall of the Empire. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 3205. The Byzantine Empire. 3 cr. hrs.**

History of Byzantine Empire bridging from late antiquity to early modernity and stretching over three continents. Surveys imperial political, economic, social and cultural policies and developments and especially the empire's encounters and interactions with Slavs, Western Europeans, Persians, Berbers, Arabs, and Turks. Prereq: Soph. standing; HIST 1001 recommended.

**HIST 3210. The Middle Ages. 3 cr. hrs.**

This course examines the emergence and development of a distinct medieval society from a mixture of Roman, Christian, and Germanic cultures. Specific topics include political fragmentation and reorganization, the growth of towns and commerce, innovative religious movements, as well as later medieval upheavals. It also considers the sibling Mediterranean cultures of the Islamic world and the Byzantine Empire. HIST 1001 and HIST 1002 recommended.

**HIST 3220. The Renaissance. 3 cr. hrs.**

Europe from the Black Death to Erasmus, with stress on Western Europe, especially Italy, and the intellectual and artistic achievements of the age. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 3225. War and Religion in Early Modern Europe, 1500-1650. 3 cr. hrs.**

The course, which stresses political and religious history, begins with the late medieval church, then studies Luther and Calvin and the rise of Protestantism, the Catholic Reformation, and the Wars of Religion. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 3230. Pre-Revolutionary Europe: 1648 to 1789. 3 cr. hrs.**

The confrontation of aristocratic societies with the modernizing forces of absolute monarchy, Enlightenment ideology, demographic change, and economic development which produced social and political upheavals in France, Spain, Italy, the Netherlands, Germany, and Sweden. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.



**HIST 3232. Reaction, Revolution, and Nationalism: 1814 to 1914. 3 cr. hrs.**

A survey of the political, economic and cultural institutions of the Western European States in the aftermath of the French Revolution and Napoleon. Principal states include Great Britain, France, Germany, Italy, the Low Countries and Spain. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 3235. Twentieth Century Europe. 3 cr. hrs.**

Europe from 1914 to the present, including: World War I and the consequences of the peace settlement, the growth of totalitarianism, World War II, and the development of collective security. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 3295. The Great War": World War I, 1914-18. 3 cr. hrs.**

A survey of the causes, course and consequences of the First World War. Beginning with events and military operations in Europe, the course also will treat the war outside of Europe and at sea, as well as the political, social, economic and intellectual impact of the "war to end all wars." Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 3297. World War II. 3 cr. hrs.**

A survey of the causes, course, and consequences of the Second World War. Focuses on the European theater including military developments, propaganda, the defeat of German and Japanese imperialism, the impact of the war on society, and the origins of the Cold War. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 3455. Modern Middle East Since 1500. 3 cr. hrs.**

A survey of the Arab, Turkish and Iranian peoples since 1500 emphasizing the Islamic backgrounds and the Middle East in world affairs, especially during the 20th century. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 3751. History and Philosophy of Crime and Punishment. 3 cr. hrs.**

A study of crime and punishment from both the historical and philosophical perspectives. The course will emphasize the European experience as a foundation for understanding American developments. Emphasis will be placed on the interdisciplinary aspects of crime and punishment. Prereq: Soph. stndg. and PHIL 1001; same as PHIL 3751 and CRLS 3751. May be counted toward the core curriculum requirement in either Philosophy or Social-behavioral Science.

**HIST 4100. Public History. 3 cr. hrs.**

An examination of the means by which the skills and methods of history are applied by professionals outside the classroom. Topics include public history as a sub-discipline of history, historic preservation, and the emergence of history museums and historical societies. Prereq: Soph. stndg., HIST 2101 and HIST 2102.

**HIST 4101. Applied History. 3 cr. hrs.**

An examination of technologies for researching, presenting and preserving historical materials. Students will learn to apply historic methods through digital media technologies. Topics will include systems and tools for: researching and collecting documents and materials: digitizing, editing and manipulating materials; presenting content to local and distant audiences; and preserving materials in appropriate formats. Digital imaging, multimedia and Web page creation, streaming technologies, presentations systems and CD/DVD production will be investigated. The unique capabilities of collaboration and distribution over high-speed networks (Internet2) will also be explored. Requirements include a final project on a historical topic that incorporates some or all of the technologies introduced in the course. This project will demonstrate mastery of content as well as technology. Prereq: Jr. stndg.

**HIST 4113. American Foreign Relations 1. 3 cr. hrs.**

American foreign relations from the American Revolution to the emergence of the United States as a world power. This course gives equal emphasis to the conduct of American diplomacy by agents of the U.S. government and the social, economic, and cultural forces that shape foreign policies. Prereq: Soph. stndg.

**HIST 4114. American Foreign Relations 2. 3 cr. hrs.**

American foreign relations from the American Revolution to the emergence of the United States as a world power. This course gives equal emphasis to the conduct of American diplomacy by agents of the U.S. government and the social, economic, and cultural forces that shape foreign policies. Begins with World War I. Prereq: Soph. stndg.

**HIST 4115. The American West. 3 cr. hrs.**

American westward expansion from colonial days to the 20th century, emphasizing the impact of the frontier on the development of American culture and institutions. Prereq: Soph. stndg.

**HIST 4130. Religion and American Life. 3 cr. hrs.**

Survey the historical impact of religious belief and institutions on the intellectual, cultural, and public life of the United States. Prereq: Soph. stndg.

**HIST 4135. African-American History. 3 cr. hrs.**

The role and response of African-Americans in American society. Emphasis on the problems of slavery, exclusion, accommodation, migration, urbanization, and currents of protest. Prereq: Soph. stndg.

**HIST 4140. American Urban History. 3 cr. hrs.**

History of the American city from the colonial era to the present. Topics include the economic, political, and cultural effects of cities on American society, as well as America's philosophical and moral response to urbanization. Prereq: Soph. stndg.

**HIST 4145. A History of Women in America. 3 cr. hrs.**

Survey of the history of women and the variety of women's experiences in America from pre-European contact to the present. The historical construction of gender and the ways that diverse women have shaped and contested their various experiences as mothers, daughters, wives, and partners; as farmers and workers; as slaves and conquered peoples; as reformers and political activists; and as immigrants and citizens are analyzed. Prereq: Soph. stndg.

**HIST 4150. Childhood in America. 3 cr. hrs.**

The history of children and childhood in the United States from colonial times to the present, with an emphasis on child rearing, race, gender, class, and popular culture. Prereq: Jr. stndg.; or cons. of instr.

**HIST 4160. Cultural and Intellectual History of the United States. 3 cr. hrs.**

A survey of American thought and culture from the first contacts between indigenous peoples and Europeans, through the development of the United States, to the present. Particular attention will be paid to those moments of intellectual and cultural conflict that illuminate and define the process by which a variety of Americans have shaped a distinct but malleable American culture. Prereq: Soph stndg.

**HIST 4170. Constitutional History of the United States. 3 cr. hrs.**

Origin and development of the American constitutional system. Principles of the Constitution. Expansion of the Constitution through usage, amendment, and judicial interpretation. Prereq: Soph. stndg.

**HIST 4212. The Crusades. 3 cr. hrs.**

Western European and Middle Eastern relations from the 11th through the 13th centuries; includes Arabic, Byzantine, Turkish, and Mongol areas. Prereq: Soph. stndg. HIST 1001 and HIST 1002 recommended.

**HIST 4213. Medieval England. 3 cr. hrs.**

A social, political, and military history of England from the Roman Empire to the rise of the Tudor Dynasty. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4245. Women in Western Civilization. 3 cr. hrs.**

Survey of women's experiences in western civilization from prehistory to the present. Focusing primarily on Europe, the course analyzes the changing roles and responsibilities of women in the family, in the work force, and in the community, and highlights the impact of phenomena such as religion, science, technology, and democracy on the shifting perceptions and definitions of gender in western civilization. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4247. Comparative Homefronts during the Second World War. 3 cr. hrs.**

Explores state policies, gender ideologies, daily realities and the role(s) of civilians, particularly women, on select home fronts of World War II. The conflict was a "watershed" in the use of violence aimed at civilians, who were targeted via air raids, food blockades, deportation, rape and mass murder. Using comparative framework, the course examines Germany, Italy, France, the concentration camps, and the United States. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4249. Intellectual History of Modern Europe. 3 cr. hrs.**

The lives and works of prominent European scientists, philosophers and artists from the Enlightenment to the present. Prereq: Soph. stndg.

**HIST 4250. Tudor England 1485 to 1603. 3 cr. hrs.**

The political, socio-economic, religious and cultural developments in Renaissance and Reformation England with particular attention to the personalities who dominate the Tudor court; the effects of the establishment of Caesaro-Papism by Henry VIII upon the art, architecture, literature, and social life of the country.

**HIST 4251. War and Revolution in Britain: 1603-1815. 3 cr. hrs.**

This course focuses on Britain's development as a constitutional monarchy and a commercial and imperial power. Particular attention is given to the Civil War, Glorious Revolution, American Revolution, and escalating rivalry with France climaxing in the Napoleonic Wars. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4252. Modern Britain. 3 cr. hrs.**

This course focuses on the democratization of Britain, the creation of the welfare state, and the erosion of Victorian Britain's commercial and political global primacy reflected in the disintegration of the British empire and fragmentation of the United Kingdom. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4255. The British Empire. 3 cr. hrs.**

Survey of the creation, expansion and dismantling of the world's largest empire from the 16th century to the present. Exploration of political, social, economic and cultural factors. Emphasis on contrasting the views and experiences of Britons and of natives of various colonized areas. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4260. Modern Ireland. 3 cr. hrs.**

A survey of the political and cultural history of Ireland since the Grattan parliament, focusing upon the dual legacy of constitutional and revolutionary nationalism in Irish life. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4262. Modern France. 3 cr. hrs.**

France from the fall of Napoleon to the present, especially emphasizing the development of French democracy and the nation's enduring impact on world affairs. Prereq: Soph. stndg.

**HIST 4264. Modern Germany. 3 cr. hrs.**

Survey of the major political, cultural, social and intellectual developments in modern Germany history since the Napoleonic period. Topics include nationalism, unification, the German (Wilhelmine) Empire, the Weimar Republic, the rise of the Nazi Party, the Third Reich, the two world wars, division, reunification and Germany's post-reunification role in Europe. Prereq: Soph. stndg.

**HIST 4270. Russia to 1861. 3 cr. hrs.**

The Slavs, the Kievan Rus Empire, the Mongol invasion, the rise of Muscovy, and the Russian empire of Peter the Great and his successors down to the emancipation of the serfs in 1861. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4271. The Russian Revolution and the Soviet Union. 3 cr. hrs.**

Pre-revolutionary Russia from 1861, the Revolution of 1917, Soviet economic growth and totalitarianism, and the emergence of the USSR as a world power and its subsequent collapse. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4290. The French Revolution and Napoleon, 1787 to 1815. 3 cr. hrs.**

A survey of Revolutionary Europe with emphasis on the causes and consequences of the Revolution, the Reign of Terror, the counter-revolutionary movements, the conquest of Europe, and the relation between revolution and religion. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4298. The Cold War. 3 cr. hrs.**

The origins, nature and consequences of the Cold War, with emphasis on the 1945-1970 period. Topics will include the continuing effects of the Cold War, prospects for new international rivalries, and the domestic consequences of the Cold War. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4320. United States-Latin American Relations. 3 cr. hrs.**

Analyzes the symbiotic relationship between the United States and Latin America from 1776 to the present, focusing on the key themes of race, colonialism, resistance, transculturation, dependency, revolution, the drug trade and immigration. Students will examine how the United States' changing global status has affected its political, economic and cultural relationship with other countries in the Americas. Prereq: Soph. stndg.; HIST 1301 and HIST 1101 recommended.

**HIST 4350. The Caribbean. 3 cr. hrs.**

This course focuses on the contours of Caribbean history, 1400 to present. It examines Native American culture, colonialism, slavery, international trade, the politics of independence, economic development, national identity, and ethnicity. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4355. History of Mexico. 3 cr. hrs.**

Mexico from pre-Columbian times to the present, with emphasis on ancient civilizations, the conquest, colonial society, independence, nineteenth-century development, Porfirian dictatorship, the Revolution of 1910, and modern society since 1920. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4450. North Africa. 3 cr. hrs.**

North Africa from the 7th century to the present, emphasizing Islamic and European influences. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4500. Modern Japan. 3 cr. hrs.**

Major events, people and debates in Japanese history from 1800 to the present. Includes examinations of the "margins" of Japanese history: the countryside, the common people, ethnic minorities, marginal identities, etc., in order to understand how individuals dealt with changes in Japan from its early modernity to the present day. Prereq: Soph. stndg.

**HIST 4550. Medieval East Asia. 3 cr. hrs.**

Examines the tremendous flourishing of Chinese and Japanese cultures between the 7th and 14th centuries and the influence Mongol conquests played on the diffusion of these cultures to the west. Prereq: Soph. stndg.

**HIST 4555. Modern China. 3 cr. hrs.**

The history of China from 1800-1976, emphasizing national responses to imperial decline, western intervention, civil wars, foreign occupation, and political turmoil. Prereq: Soph. stndg.

**HIST 4600. Comparative Twentieth-Century Genocides. 3 cr. hrs.**

Examines the emergence, development, underlying causes and uses of genocide, ethnic cleansing and the other crimes against humanity in the twentieth-century. Case studies include colonial genocides; the Armenian genocide; the Holocaust; the Cambodian genocide; the Rwandan genocide; and the ethnic cleansings in the former Yugoslavia. Explores responses to these crimes, denial and memory, justice and redress, and strategies of prevention and intervention will be explored. Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.

**HIST 4931. Topics in History. 3 cr. hrs.**

A lecture course on various areas and themes. The specific topics of 4931 courses will be designated in the Schedule of Classes. Prereq: Soph. stndg.

**HIST 4951. MU Led Travel/Study Abroad. 3 cr. hrs.**

Course taught in an international setting by Marquette professors and where students earn Marquette credit. Study Abroad expenses apply.

**HIST 4953. Readings in History. 3 cr. hrs.**

Readings and discussion course designed to introduce a small group of undergraduates to topics, problems and methodologies in history which are not taught in the regular lecture courses. The topics will be designated in the Schedule of Classes. Prereq: Jr. stndg.

**HIST 4955. Undergraduate Seminar in History. 3 cr. hrs.**

Designed to initiate a small group of undergraduates in the techniques of scholarly historical study by concentrated work in a specialized field. Prereq: Sr. stndg.

**HIST 4986. Internship in Public and Applied History. 3 cr. hrs.**

Offers History majors, minors, and interdisciplinary minors in public history an opportunity to have a work experience outside of the classroom in such venues as archives, art museums, historical societies, and museums. Students must arrange the internship in consultation with the public history adviser and complete an internship agreement. Undergraduate students work 8-10 hours per week and graduate students work 10-12 hours per week during the term. Students complete a written assignment in conjunction with the work experience as part of the course requirements. Completion or concurrent enrollment in HIST 4100 is strongly recommended. S/U grade assessment. Prereq: Cons. of public history adviser.

**HIST 4995. Independent Study in History. 1-3 cr. hr.**

Prereq: Jr. stndg., cons. of instr., and cons. of dept. ch.

**HIST 4999. Senior Thesis. 3 cr. hrs.**

Prereq: 3.500 MU GPA and cons. of dept. ch.

## Honors Program

### **HOPR 1953. Honors Program First Year Seminar. 1 cr. hr.**

The first-year seminars are intended to introduce Marquette Honors students to the university's top teachers and scholars through small seminars offering both classroom excitement and intellectual stimulation. These are one-credit, non-graded seminars that meet for 75 minutes once a week, and each section consists of no more than 10 students. The content of the individual seminars varies; our primary goal is to offer students the opportunity to pursue in some depth a specific intellectual topic in an academic setting that is fun, safe, and that encourages exploration and risk taking. Offered fall term only. S/U grade assessment. Prereq: Admission to Marquette University Honors Program.

### **HOPR 2953. Honors Program Second Year Seminar. 2 cr. hrs.**

The second-year seminar allows students to investigate a topic from a perspective that joins a specific disciplinary technique (e.g., literary analysis, philosophical inquiry, scientific empiricism) with a non-traditional academic approach in an effort to broaden the confines of intellectual inquiry. Examples of non-traditional approaches include contemplative practice, action and reflection, and vocation discernment components. The specific topics will differ among individual sections but the goals common to all sections include helping students to understand the relationship between disciplinary-based and more non-traditional modes of inquiry and the limitations and assets of each; appreciate the value of contemplative and experiential practices in gaining a richer understanding of the meaning and implications of an issue; and explore the reciprocal relationship between contemplation and action. Offered each term. S/U grade assessment. Prereq: HOPR 1953 and admission to Marquette University Honors Program.

### **HOPR 3953. Honors Program Junior Seminar. 3 cr. hrs.**

Topic of broad cultural interest investigated through a variety of approaches drawn often from several disciplines. Topics vary. Guest faculty from within the university are invited to conduct the seminar and encouraged to arrange as many different and experimental teaching formats as are consonant with the topic considered. Offered every term. Honors students only. Limited to 15. Prereq: Cons. of dept. ch. and cons. of program director.

### **HOPR 3955. Honors Program Undergraduate Research Seminar. 3 cr. hrs.**

This course serves as an introduction to research methods and issues in preparation for participation in the Honors Undergraduate Research Opportunity Program (HUROP). It is intended to prepare students for humanistically-informed participation in HUROP. The course provides students with a critical introduction to academic research and its attending methodological and philosophical underpinnings. Inherently interdisciplinary, typical topics include the scientific method and its limitations, non-scientific research, value and ethics in research, and research and society. Prereq: HOPR 1953, HOPR 2953, and cons. of program director.

### **HOPR 4953. Honors Program Senior Full Circle Seminar. 3 cr. hrs.**

This course culminates the Honors Program Seminar Series by offering an integrative multidisciplinary seminar that encourages students to transcend the increasingly specialized disciplinary perspectives that characterize the latter stages of one's college career. In an effort to bring students "full circle" in the learning process, the seminar returns to selected texts and concepts studied in earlier Honors Foundation Courses and Seminars. The seminar is focused on a specific theme and challenges students' abilities to make connections surrounding this theme in different historical periods, disciplines, cultures and models of inquiry (e.g. analytic or contemplative). The explicit goal of this course is to help students begin to recognize how their education has contributed to a framework for thinking about, making decisions in, and interacting with the world. Prereq: HOPR 1953, HOPR 2953, cons. of dept. ch., cons. of program director, and Sr. stndg. in the Honors Program.

## Interdisc Environmental Ethics

### **INEE 4997. Capstone Seminar for Interdisciplinary Minor in Environmental Ethics. 3 cr. hrs.**

Provides students with an opportunity to explore the ethical dimensions of an environmental problem informed by the minor's core disciplines. Students identify and design their approach to the problem, investigate appropriate sources of information, consult with Marquette faculty and other experts who are invited to the seminar sessions, and collaborate in designing an ethical approach to resolving the problem grounded in theological beliefs and philosophical principles. Service opportunities may be offered to students in organizations, agencies or businesses that are addressing the problem. Arranged by the director of the minor and led by a faculty member, counts as an elective in the seminar professor's discipline and as a Senior Experience. Prereq: Jr. stndg., INEE Minor or Minor in Ethics, cons. of INEE dir., and completion of two courses required for the INEE minor.

## Interdisciplinary Ethics

### **INET 4953. Seminar for Interdisciplinary Minor in Ethics. 3 cr. hrs.**

Senior seminar designed to culminate the interdisciplinary minor in ethics. Students will have the opportunity to integrate their previous studies in ethics and explore some current and perennial problems in depth, typically leading to a research paper or presentation. Topics and faculty vary. Prereq: Cons. of dept. ch.; six courses (18 cr.) from the following areas: Ethical Theory (2 required courses): PHIL 2310 and THEO 2400 or 4400; Applied Ethics (2 req courses, at least one from PHIL): PHIL 4320, 4330, 4335, 192, THEO 4440, 4450, 4490; COMM 3900; Contemporary Interfaces with Ethics (2 req. courses): PHIL 3710, 3750, 3730, 3740, 3350, 3770, 3751, 3780; THEO 4420; MARK 157; MANA 181; COMM 4400; HEAL 131, 2100; other courses must be approved.

## Interdiscpl Family Studi

### **INFS 4953. Interdisciplinary Seminar in Family Studies. 3 cr. hrs.**

Interdisciplinary readings, discussion, and research centering on factors that affect family life, family satisfaction, and family stability. Interaction with faculty family specialists. Focuses on interdisciplinary research methods in the area of the family. Prereq: SOCI 2200, plus 12 additional hours from the family studies minor.

## Interdiscipl Internatl Affairs

### **INIA 4997. Senior Capstone Seminar in International Affairs. 3 cr. hrs.**

Senior seminar for INIA majors and minors that offers students the opportunity to integrate their background, core and concentration studies of economics, political science and history as well as other disciplines in exploring a prominent issue in international affairs. Topics vary. Combines extensive readings, lecture, class discussion and student presentations. Prereq: Sr. stndg. and INIA major or minor.

## Interdiscipl Justice Peace

### **INJP 2010. Introduction to Peace Studies. 3 cr. hrs.**

An interdisciplinary, introductory seminar for students interested in the Interdisciplinary Minor in Justice and Peace (INJP). Students explore faith-based and secular theoretical approaches to the concepts of justice and peace, through critical discussion of relevant texts and reflective writing. Prereq: Soph. stndg.

**INJP 4997. Capstone Seminar in Justice and Peace. 3 cr. hrs.**

Senior seminar for students completing the Interdisciplinary Minor in Justice and Peace (INJP) designed to bring interdisciplinary approaches to bear on questions of justice and peace. Students explore paths to justice and peace through text-based inquiry, multidisciplinary theoretical analysis, and integration of prior course work in the minor. Service and experiential learning opportunities may be offered. Prereq: Sr. stndg. and INJP minor.

**INMS 4952. Medieval Models Colloquium (Medieval Studies). 3 cr. hrs.**

Interdisciplinary treatment of medieval topics featuring presentations by faculty of several departments. Specific topics and faculty vary. Prereq: Second semester Fr. stndg. May be counted towards Medieval Studies Minor.

## Italian

**ITAL 1001. Elementary Italian 1. 4 cr. hrs.**

Introduction to the Italian language Fundamentals of comprehension, speaking, reading and writing. Open to students with no previous study of Italian; or by departmental placement.

**ITAL 1002. Elementary Italian 2. 4 cr. hrs.**

Continuation of ITAL 1001 with emphasis on further development of vocabulary, and basic conversation through supplemental readings. Prereq: ITAL 1001.

**ITAL 2001. Intermediate Italian 1. 3 cr. hrs.**

Grammar review, oral and written practice, and supplemental readings and activities to develop cultural awareness. Prereq: ITAL 1002; or by departmental placement.

**ITAL 2002. Intermediate Italian 2. 3 cr. hrs.**

Continuation of ITAL 2001 plus further development and practice of all language skills. Prereq: ITAL 2001; or by departmental placement.

**ITAL 3001. Italian Composition and Conversation. 3 cr. hrs.**

Grammar review and practice in the oral and written use of the Italian language. Prereq: ITAL 2002; or by departmental placement.

**ITAL 3100. Advanced Italian Composition and Conversation. 3 cr. hrs.**

Practice and review of advanced grammatical structures of the Italian language for further development of oral and written communication skills. Prereq: ITAL 3001; or cons. of dept. ch.

**ITAL 3200. Italian Culture and Civilization. 3 cr. hrs.**

Readings and lectures in English dealing with different aspects of Italian culture as seen through its history, art, literature and film. Knowledge of Italian not required.

**ITAL 3210. Italian Literature in English Translation. 3 cr. hrs.**

Readings in English translation of selected masterpieces of Italian literature. Knowledge of Italian not required. May be counted as part of the Arts and Sciences literature college requirement but not as part of the foreign language requirement.

**ITAL 4931. Topics in Italian Language, Culture and Literature. 3 cr. hrs.**

Topics vary. Subject to be announced. Prereq: ITAL 3001; or cons. of dept. ch.

## Japanese

**JPNS 1001. Elementary Japanese 1. 4 cr. hrs.**

Introduction to the Japanese language. Fundamentals of comprehension, speaking, reading and writing. Prereq: No previous study of Japanese; or by departmental placement.



**JPNS 1002. Elementary Japanese 2. 4 cr. hrs.**

Continuation of JPNS 1001 with emphasis on further development of oral communication skills, listening, reading and basic character writing in Japanese. Prereq: JPNS 1001.

**JPNS 2001. Intermediate Japanese 1. 3 cr. hrs.**

Grammar review, further development of intermediate level skills in listening, speaking, reading and writing Japanese characters. Emphasis on Japanese culture throughout the course. Prereq: JPNS 1002; or by departmental placement.

**JPNS 2002. Intermediate Japanese 2. 3 cr. hrs.**

Continuation of JPNS 2001 with emphasis on further development of oral communication skills, listening, reading and writing in Japanese. Prereq: JPNS 2001; or by departmental placement.

**JPNS 3200. Japanese Culture and Civilization. 3 cr. hrs.**

Readings and lectures in English dealing with the culture and civilization of Japan. Knowledge of Japanese not required.

**JPNS 3210. Japanese Literature in English Translation. 3 cr. hrs.**

Readings in English translation of selected masterpieces of Japanese literature. Knowledge of Japanese not required. May be counted as part of the Arts and Sciences literature college requirement but not as part of the foreign language requirement.

## Latin

**LATN 1001. Elementary Latin 1. 4 cr. hrs.**

Introduction to Latin morphology and syntax, with graded readings and cultural information. Open to students with no previous study of Latin; or by departmental placement.

**LATN 1002. Elementary Latin 2. 4 cr. hrs.**

Continuation of LATN 1001. Exercises in Latin morphology and syntax with graded readings and cultural information. Prereq: LATN 1001; or by departmental placement.

**LATN 2001. Intermediate Latin 1. 3 cr. hrs.**

Exercises in advanced Latin morphology and syntax with graded readings in Latin prose and poetry and cultural information. Prereq: LATN 1002; or by departmental placement.

**LATN 2002. Intermediate Latin 2. 3 cr. hrs.**

A continuation of LATN 2001. Review of Latin morphology and syntax with extended readings from Latin literature. Prereq: LATN 2001; or by departmental placement.

**LATN 3500. Survey of Republican Latin Literature. 3 cr. hrs.**

Survey of Latin Literature through the end of the Roman Republic, with emphasis on reading, translation, analysis, and composition. Prereq: LATN 2002; or cons. of dept. ch.

**LATN 3505. Survey of Later Latin Literature. 3 cr. hrs.**

Survey of Latin Literature including Imperial and Medieval Latin, with emphasis on reading, translation, analysis and composition. Prereq: LATN 2002; or cons. of dept. ch.

**LATN 4100. Latin Prose Composition. 3 cr. hrs.**

Systematic review of Latin syntax. Exercises of increasing difficulty in writing Latin prose. Analysis of prose of selected Roman authors. Creative writing in Latin. Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

**LATN 4115. Medieval Latin. 3 cr. hrs.**

Reading, translation, and analysis of a wide selection of Medieval Latin texts in prose and verse. Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

**LATN 4505. Vergil: Aeneid. 3 cr. hrs.**

Translation of selections from Books 1-12 of Vergil's great national epic, the Aeneid, telling of the journey of Aeneas from fallen Troy to the shores of Italy. Background readings and discussions on Vergil's literary debt to Homer, The Aeneid as a national epic, and the Roman view of the Trojan legacy. Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

**LATN 4510. Horace: Odes. 3 cr. hrs.**

Reading, translation, and analysis of selected lyric poems of Horace. Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

**LATN 4515. Roman Elegiac Poetry. 3 cr. hrs.**

Translations of selections from the love poems of Tibullus, Propertius, and Ovid. Background readings and discussions on the origin and conventions of Roman elegiac poetry. Study of the elegiac couplet. Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

**LATN 4520. Roman Comedy: Plautus and Terence. 3 cr. hrs.**

Reading in Latin of several comedies from the works of Plautus and Terence, Rome's surviving comic playwrights. Comedies translated may include Plautus' *Miles Gloriosus*, *Menaechmi*, and *Mostellaria*; and Terence's *Adelphi* and *Woman of Andros*. Background readings and discussion on the origin and conventions of Roman comedy and the technicalities of staging a Roman comedy. Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

**LATN 4525. Tacitus: Germania and Agricola. 3 cr. hrs.**

Reading, translation, and analysis of selections from the shorter works of Tacitus, with additional selections from the *Annales*. Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

**LATN 4530. Cicero: Political and Philosophical Writings. 3 cr. hrs.**

Reading, translation, and analysis of selections from the speeches and dialogues of Cicero. Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

**LATN 4550. Advanced Studies in Latin Poetry. 3 cr. hrs.**

Reading, translation and analysis of a major Latin poet such as Catullus, Ovid or Juvenal. Prereq: LATN 3500 or LATN 3505; or cons. of instr.

**LATN 4560. Advanced Studies in Latin Prose. 3 cr. hrs.**

Readings translation and interpretation of a major Latin prose author such as Sallust, Livy, Seneca, Quintilian or St. Augustine. Prereq: LATN 3500 or LATN 3505; or cons. of instr.

**LATN 4931. Topics in Latin Language, Culture and Literature. 1-3 cr. hr.**

Topics vary. Subject to be announced. Prereq: Sr. stndg. or cons. of dept. ch.

**LATN 4995. Independent Study in Latin. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

**LATN 4999. Senior Thesis in Latin. 2 cr. hrs.**

Introductory thesis guidance for approved students under the direction of a departmental adviser. Prereq: Cons. of dept. ch.

## Mathematics

**MATH 105. Intermediate Algebra. 2 cr. hrs.**

Designed for students with deficient mathematical backgrounds. Basic arithmetic and algebraic operations on integers, polynomials, rational numbers and expressions. Linear equations and inequalities, quadratic equations. Relations and functions. Not applicable to the total number of hours required for graduation. Prereq: Cons. of dept. ch.

**MATH 1100. College Algebra. 3 cr. hrs.**

Precalculus mathematics including basic algebraic operations, equations, inequalities, complex numbers, graphs, functions, zeros of polynomials, systems of equations, and matrices. Offered every term. Prereq: Two years of college preparatory mathematics including a year each of algebra and geometry. Does not count toward Math-Logic-Computer requirement in the Arts and Sciences College Curriculum.

**MATH 1101. Trigonometry and Analytic Geometry. 3 cr. hrs.**

A continuation of MATH 1100 covering precalculus mathematics including trigonometric functions and their properties, trigonometric identities and equations, applications of trigonometry, vectors, polar coordinates, exponential and logarithmic functions, and conic sections. Prereq: MATH 1100 or equivalent. Equivalent is one year of high school geometry and the equivalent of MATH 1100 in high school courses. Does not count toward the Math-Logic-Computer requirement in the Arts and Sciences College Curriculum.

**MATH 1300. The Nature of Mathematics. 3 cr. hrs.**

Concepts of mathematics for liberal arts students. Emphasis on understanding and appreciating concepts rather than developing computational skills. For example, such topics as the historical development of ideas, role of abstraction, and relationship between different areas of mathematics is given precedence over performance of arithmetic and algebraic manipulations. Prereq: Two years of college preparatory mathematics.

**MATH 1390. Finite Mathematics. 3 cr. hrs.**

Mathematics of finance, including simple and compound interest, present and future value of ordinary annuities, sinking funds, and amortization schedules. Matrices, linear systems and linear programming. Combinatorics and elementary probability theory. Prereq: MATH 1100 or equivalent. Equivalent is three years of college preparatory mathematics.

**MATH 1400. Elements of Calculus 1. 3 cr. hrs.**

The basic concepts and techniques of differential and integral calculus. Applications and examples chosen primarily from economics, biology, the social and behavioral sciences and business. Prereq: MATH 1100 or equivalent. Equivalent is three years of college preparatory mathematics.

**MATH 1410. Calculus for the Biological Sciences. 3 cr. hrs.**

Fundamental concepts and techniques of differential and integral calculus, logarithmic, exponential and trigonometric functions, examples and applications from biology and medicine. Prereq: MATH 1100 or equivalent. Equivalent is three years of college preparatory mathematics.

**MATH 1450. Calculus 1. 4 cr. hrs.**

Functions of one variable, limits and continuity. The derivative and the definite integral with applications. Prereq: MATH 1101 or equiv. Equivalent is three to four years of college preparatory mathematics including topics listed in description of MATH 1101.

**MATH 1451. Calculus 2. 4 cr. hrs.**

The transcendental functions. Techniques of integration including numerical methods. Elementary differential equations. Infinite sequences and series, Taylor Series. Prereq: MATH 1450.

**MATH 1455. Calculus 2 for Biomedical and Civil Engineers. 4 cr. hrs.**

Techniques of integration, including numerical methods. Infinite sequences and series, including Taylor Series. Analytic-Geometry including parametric equations, vectors and vector functions. The differential and integral calculus of functions of several variables. Restricted to students in BIEN or CEEN. Prereq: MATH 1450.

**MATH 1700. Modern Elementary Statistics. 3 cr. hrs.**

Fundamental theory and methods of statistics without calculus. Descriptive statistics, elements of probability theory, estimation, tests of hypotheses, regression, correlation, introduction to computer methods of statistical tabulation and analysis. This course is recommended for students seeking a general introduction to statistical concepts and is not intended to be a final course in statistics for students who need a thorough working knowledge of statistical methods. Prereq: MATH 105 or equivalent. Equivalent is two years of college preparatory mathematics. May not be taken for credit by students who have received college credit for another probability or statistics course.

**MATH 2030. Problem Solving and Reasoning for Teachers. 3 cr. hrs.**

Mathematical content and processes for teachers. Mathematical techniques and ways of thinking are used to enhance mathematical power. Multiple ways of organizing and analyzing data, reasoning and communication skills, and multiple problem-solving strategies are used to solve nonroutine problems. In the process, elementary mathematical ideas are expanded and deepened. Restricted to students in the teacher preparation program. Prereq: Two years of college preparatory mathematics.

**MATH 2031. Number Systems and Operations for Elementary Teachers. 2 cr. hrs.**

Mathematical content and processes for elementary teachers. Uses a problem solving approach. Integrates mathematics content with teaching methods and learning theory. In-depth study of whole and rational number systems including analyses of algorithms for addition, subtraction, multiplication, and division. Provides a framework for the meaningful teaching of place value, whole numbers, exponents, fractions, decimals, percents, ratios, proportions, probability, and data analysis. Restricted to students in the elementary teacher preparation program. Prereq: EDUC 1964, which must be taken concurrently, and MATH 2030.

**MATH 2032. Algebra and Geometry for Teachers. 2 cr. hrs.**

Mathematical content and processes for teachers. Uses a problem solving approach. Integrates mathematics content with teaching methods and learning theory. In-depth study of the growth of algebraic and geometric reasoning. Provides a framework for the meaningful teaching of integers, patterns, algebraic expressions, functions, equations, graphs, spatial visualization, polygons and polyhedra, similarity and congruence, conjectures and deductions in geometry, and mathematical modeling. Restricted to students in the teacher preparation program. Prereq: EDUC 2964, which must be taken concurrently, and MATH 2031.

**MATH 2100. Discrete Mathematics. 3 cr. hrs.**

Introduction to set theory, logic, mathematics induction, finite state machines, graph theory, modular arithmetic, Boolean algebra, and coding theory. Applications in computer science are emphasized. Two years of college preparatory mathematics required. May not be taken for credit by those who have completed MATH 2350.

**MATH 2105. Discrete Mathematics for Engineers. 3 cr. hrs.**

Counting methods. The algebra of sequences, generating functions, and recurrences. The algebra of finite state machines and semigroups. Relations, graphs, posets, and trees. Path and flow problems. Prereq: MATH 2451. Credit will not be given for both MATH 2105 and either MATH 2100 or MATH 2350.

**MATH 2350. Foundations of Mathematics. 3 cr. hrs.**

Introduction to set theory, logic, mathematical induction, graph theory, modular arithmetic, and higher mathematical thinking through proof and applications. Mathematical proof is emphasized. Prereq: MATH 1400, MATH 1410 or MATH 1450.

**MATH 2450. Calculus 3. 4 cr. hrs.**

Three-dimensional analytic geometry including parametric equations, vectors and vector functions. The differential and integral calculus of functions of several variables. Prereq: MATH 1451.

**MATH 2451. Differential Equations. 4 cr. hrs.**

Methods and techniques applicable to first order, nth order, and systems of first order differential equations. Eigenvalues, eigenvectors, the Wronskian, Laplace transforms, linearization, and phase portraits. Prereq: MATH 2450.

**MATH 2455. Differential Equations for Biomedical and Civil Engineers. 3 cr. hrs.**

Methods and techniques for solving differential equations and systems of differential equations, with applications to biomedical and civil engineering. Restricted to students in BIEN or CEEN. Prereq: MATH 2450 or MATH 1455.

**MATH 3030. The Teaching of Mathematics. 3 cr. hrs.**

Historical background, problems, curricular materials, and teaching procedures in the various areas of mathematics pertinent to the needs of a secondary school mathematics teacher. In addition, a three-hour time block on one day each week between 8 a.m. and 3 p.m. must be kept free for clinical experience. Prereq: EDUC 2227 and either MATH 4120 or MATH 4420, which may be taken concurrently. Admission to the College of Education.

**MATH 3100. Linear Algebra and Matrix Theory. 3 cr. hrs.**

N-dimensional vector spaces, bases and coordinate systems, linear transformations and matrices, systems of equations, characteristic values, applications to differential equations and geometry. Prereq: MATH 2451 or MATH 2350.

**MATH 3520. Operational Methods in Physics and Engineering. 3 cr. hrs.**

Functions of a complex variable. Laplace and Fourier transforms and applications. Introduction to the calculus of variations. Prereq: MATH 2450.

**MATH 3977. Problem Solving: Putnam Competition. 1 cr. hr.**

Students will study mathematical problems, examine their solutions and formulate general problem solving methods and techniques. The course is a preparation for the Putnam Mathematical Competition. S/U grade assessment. Prereq: Cons. of instr.

**MATH 4030. Concepts in Geometry and Calculus from an Advanced Standpoint. 3 cr. hrs.**

Topics chosen primarily from geometry and calculus, taught from an advanced standpoint to enrich and deepen the student's understanding. Emphasis on alternative approaches, generalizations, historical contexts and connections with prior mathematical studies. Prereq: MATH 4420 and six additional hrs. of upper division MATH courses and cons. of dept. ch.

**MATH 4040. Concepts in High School Algebra and Number Theory from an Advanced Standpoint. 3 cr. hrs.**

Topics closely related to the high school mathematics curriculum, chosen primarily from algebra and number theory, taught from an advanced standpoint to enrich and deepen the student's understanding. Emphasis on alternative approaches, generalizations, historical contexts and connections with prior mathematical studies. Offered alternate spring terms. Course is offered for graduate credit only to students enrolled in MSST. Prereq: MATH 4120 and cons. of dept. ch.

**MATH 4120. Abstract Algebra 1. 3 cr. hrs.**

Sets, mappings, operations on sets, relations and partitions. A postulational approach to algebraic systems including semigroups, groups, rings and fields. Homomorphisms of groups and rings, number systems, polynomial rings. Prereq: MATH 2350.

**MATH 4121. Abstract Algebra 2. 3 cr. hrs.**

A continuation of MATH 4120 with emphasis on groups, rings, fields, and modules. Prereq: MATH 4120.

**MATH 4200. Intermediate Analysis 1. 3 cr. hrs.**

Limits and continuity, differentiability, Riemann integration. Topology of N-dimensional spaces. Prereq: MATH 2451 or MATH 3100.

**MATH 4201. Intermediate Analysis 2. 3 cr. hrs.**

Transformations of N-spaces, line and surface integrals, sequences and series, uniform convergence. Prereq: MATH 4200.

**MATH 4210. Complex Variables. 3 cr. hrs.**

Complex numbers, analytic functions, differentiation, series expansion, line integrals, singularities, and residues. Prereq: MATH 2450.

**MATH 4300. History of Mathematical Ideas. 3 cr. hrs.**

Topics selected from the following: development of the number system (need for irrational and complex numbers); development of geometry including the effects of the discovery of non-Euclidean geometry; limit concept; need for axiomatic structures; twentieth-century problems. Current mathematics research and place of mathematics in today's world. Prereq: Jr. stdng. or cons. of dept. ch.

**MATH 4320. Theory of Numbers. 3 cr. hrs.**

Integers, unique factorization theorems, arithmetic functions, theory of congruences, quadratic residues, partition theory. Prereq: MATH 2350.

**MATH 4420. Foundations of Geometry. 3 cr. hrs.**

Modern postulational development of Euclidean and non-Euclidean geometries. Prereq: MATH 2350.

**MATH 4450. Topology. 3 cr. hrs.**

Topological spaces, mappings, metric spaces, product and quotient spaces. Separation axioms, compactness, local compactness and connectedness. Prereq: MATH 2350.

**MATH 4500. Theory of Differential Equations. 3 cr. hrs.**

Existence and uniqueness theorems, linear and non-linear systems, numerical techniques, stability. Prereq: MATH 2451 or MATH 3100.

**MATH 4510. Elementary Partial Differential Equations. 3 cr. hrs.**

Fourier series, method of separation of variables, eigenfunction expansions, application of eigenfunctions to partial differential equations, Green's functions and transform methods. Prereq: MATH 2451 or MATH 3100.

**MATH 4540. Numerical Analysis. 3 cr. hrs.**

Numerical solution of algebraic and transcendental equations, linear systems and the algebraic eigenvalue problem, interpolation and approximation, numerical integration, difference equations, numerical solution of differential equations, and finite difference methods. Prereq: COSC 2200, COSC 2100 and either MATH 1400 or MATH 1451; or COSC 2010 and MATH 1451; or COEN 1610 and MATH 1451.

**MATH 4630. Mathematical Modeling and Analysis. 3 cr. hrs.**

Construction and analysis of mathematical models from biological, behavioral, and physical sciences. Prereq: MATH 2451 or MATH 3100.

**MATH 4650. Theory of Optimization. 3 cr. hrs.**

Fundamental theorems describing the solution of linear programs and matrix games. Minimax, duality, saddle point property, simplex and specialized algorithms. Zero sum games, transportation and assignment problems, applications to economics. Prereq: MATH 2451 or MATH 3100.

**MATH 4670. Applied Combinatorial Mathematics. 3 cr. hrs.**

Permutations and combinations, recurrence relations, inclusion and exclusion, Polya's theory of counting, graph theory, transport networks, matching theory. Prereq: MATH 2100 or MATH 2350.

**MATH 4700. Theory of Probability. 3 cr. hrs.**

Random variables, distributions, moment generating functions of random variables, various derived probabilistic models and applications. Recommended, with MATH 4710, for students in mathematics, engineering, and the physical and behavioral sciences. Prereq: MATH 2450.

**MATH 4710. Mathematical Statistics. 3 cr. hrs.**

Sampling theory and distributions, estimation and hypothesis testing, regression, correlation, analysis of variance, non-parametric methods, Bayesian statistics. Prereq: MATH 4700.

**MATH 4720. Statistical Methods. 3 cr. hrs.**

Probability, discrete and continuous distributions. Treatment of data, point and interval estimation, hypothesis testing. Large and small sample method, regression, non-parametric methods. An introductory applications-oriented course recommended for students who wish to acquire a basic understanding of statistical methods. Prereq: MATH 1400, MATH 1410 or MATH 1450. May not be taken for credit by those who have completed MATH 4710.

**MATH 4740. Biostatistical Methods and Models. 3 cr. hrs.**

Introduction to the statistics of life science and the use of mathematical models in biology. Data analysis and presentation, regression, analysis of variance, correlation, parameter estimation and curve fitting. Biological sequence analysis, discrete and continuous mathematical models and simulation. Credit will not be given for both MATH 4720 and MATH 4740. Prereq: One semester of calculus.

**MATH 4760. Time Series Analysis. 3 cr. hrs.**

Basic concepts of probability. Stationary time series. Autocorrelation and spectrum. Descriptive methods for time series data. ARMA and ARIMA models: estimation and forecasting. Identification and diagnostic techniques. Periodogram and spectral analysis. Use of softwares for time series analysis. Offered alternate spring terms. Prereq: MATH 2450 or equivalent.

**MATH 4780. Regression Analysis. 3 cr. hrs.**

Basic concepts of statistical inference, simple linear regression, multiple linear regression, diagnostic analysis, selecting the best equation, stepwise methods, nonlinear regression, use of statistical software. Offered alternate spring terms. Prereq: MATH 4720 or equivalent.

**MATH 4931. Topics in Mathematics or Statistics. 1-3 cr. hr.**

Topics selected from one of the various branches of mathematics or statistics. Specific topics to be announced in the Schedule of Classes.

**MATH 4953. Undergraduate Seminar. 3 cr. hrs.**

Designed to initiate a selected group of qualified undergraduates into the techniques and discipline of scholarly research by concentrated work in a restricted field. Emphasis on critical reading and analysis of sources. Specific subjects to be announced in the Schedule of Classes. Prereq: Cons. of dept. ch.

**MATH 4987. Co-op Work Period. 0 cr. hrs.**

Students work full-time during fall or spring terms in a cooperative education program work assignment approved in advance by the department. Responsibilities include relevant academic content. Grading and credits are accomplished by registering for MATH 4988 during the following term. Fee. Prereq: Jr. stndg. SNC/UNC grade assessment.

**MATH 4988. Co-op Grading Period. 1 cr. hr.**

Grading for preceding co-op work assignment is accomplished by completing a report on the work assignment, a report on academic material related to the work assignment, and other materials as required. Grading is completed during the school term following the work assignment. May be taken more than once, but a maximum of two credits may be counted toward a major in the department. Prereq: Jr. stndg. and MATH 4987.

**MATH 4995. Independent Study in Mathematics. 1-3 cr. hr.**

Directed reading and/or research in Mathematics under a member of the staff. Prereq: Cons. of dept. ch.

**MATH 4999. Senior Thesis. 2 cr. hrs.**

Preparation of a thesis by approved students under the direction of an adviser from the staff. Prereq: Cons. of dept. ch.

## **Military Science Leadership**

### **MISL 1001. Military Physical Training Laboratory 1. 1 cr. hr.**

This goal-oriented, small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the laboratory.

### **MISL 1002. Military Physical Training Laboratory 2. 1 cr. hr.**

This goal-oriented, small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the laboratory.

### **MISL 1100. Foundations of Officership. 1 cr. hr.**

Introduction to issues and competencies that are central to a commissioned officer's responsibilities. This course is designed to establish a framework for understanding officership, leadership, and Army values. Additionally, the semester addresses "life skills" including fitness and time management. The MISL 1100 course is designed to give the student an accurate insight into the Army Profession and the officer's role within the Army.

### **MISL 1200. Basic Leadership. 1 cr. hr.**

MISL 1200 is designed to build on the experiences of the fall term and further broaden the student's introduction to the Army. Students receive an introduction to communication principles, military briefings, effective writing, problem solving, goal setting, listening and speaking skills, and counseling. Students are provided a broad overview of life in the Army, including the employment benefits and work experiences of junior officers.

### **MISL 1800. American Crucible: The Military and the Development of the United States. 3 cr. hrs.**

This course explores American military history from the colonial period to the present through the lens of military affairs and primarily through the land component of the military, the Army. This course will use the Army and the military itself as a lens through which to explore the impact of governmental structures and policies, international affairs, societal change, technological and industrial innovation, and geography on American development. Prereq: Cons. of dept. ch.

### **MISL 2001. Military Physical Training Laboratory 3. 1 cr. hr.**

This goal-oriented, small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the laboratory.



**MISL 2002. Military Physical Training Laboratory 4. 1 cr. hr.**

This goal-oriented, small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the laboratory.

**MISL 2100. Individual Leadership Studies. 2 cr. hrs.**

Explores the dimensions of creative and innovative tactical leadership strategies and styles by examining team dynamics and two historical leadership theories that form the basis of Army leadership framework. Aspects of personal motivation and team building are; practiced planning, executing and assessing team exercises. While participation in the leadership lab is not mandatory during the MISL II year, significant experience can be gained in a multitude of areas and participation in the labs is highly encouraged. The focus continues to build on developing knowledge of the leadership attributes and core leader competencies through the understanding of Army rank, structure and duties as well as broadening knowledge of land navigation and squad tactics. Case studies will provide a tangible context for learning the Soldier's Creed and Warrior Ethos as they apply in the contemporary operating environment. The key objective of this semester is to continue to develop knowledge of the Army's leadership philosophies and integrate this knowledge into tactical strategies and team development. Prereq: MISL 1100 and MISL 1200.

**MISL 2200. Leadership and Teamwork. 2 cr. hrs.**

Examines the challenges of leading tactical teams in the complex contemporary operating environment (COE). Highlights dimensions of terrain analysis, patrolling and operation orders. Further study of the theoretical basis of the Army Leadership Requirements Model explores the dynamics of adaptive leadership in the context of military operations. MISL 2200 provides a smooth transition to MISL 3100. Cadets develop greater self-awareness as they assess their own leadership styles and practice communication and team-building skills. COE case studies give insight into the importance and practice of teamwork and tactics in real-world scenarios. The key learning objective of this semester is to explore leadership in the contemporary environment incorporating terrain analysis, tactical strategies and team development. Prereq: MISL 1100 and 1200, or cons. of instr.

**MISL 3001. Military Physical Training Laboratory 5. 1 cr. hr.**

This goal-oriented, small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the laboratory.

**MISL 3002. Military Physical Training Laboratory 6. 1 cr. hr.**

This goal-oriented small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the laboratory.

**MISL 3100. Leadership and Problem Solving. 2 cr. hrs.**

Designed to help prepare students for the challenges of accepting greater responsibility in teaching and participating in Military Science and Leadership Labs. It is the first course that all students seeking a commission in the United States Army must take. Students will be introduced to the principles in the Leader Development Program, the Army's troop leading procedures, and taught how to plan and conduct individual and small unit training. Prereq: MISL 3101, which may be taken concurrently, MISL 1100, MISL 1200, MISL 2100, and MISL 2200, or cons. of instr.

**MISL 3101. Applied Leadership Laboratory 1. 1 cr. hr.**

Practical exercises and evaluations in military leadership skills including operational planning, quality management and inspections, and controlling small groups in realistic settings. Students develop training programs, plan training sessions, and present classes for this and other Military Science Leadership labs. Topics include individual and small unit movement techniques, communicating by tactical radio, water survival (drownproofing), drill and ceremony, and land navigation skills. Prereq: MISL 3100 which may be taken concurrently.

**MISL 3200. Leadership and Ethics. 2 cr. hrs.**

Designed to continue the student's development as a leader as he/she receives further instruction in interpersonal communication, values and ethics, and leadership. Additionally, students receive an introduction and overview of various summer training opportunities such as, airborne school and the National Advanced Leadership Camp (NALC). Students are also introduced to the many career choices the Army has to offer. Prereq: MISL 3100 and MISL 3202, which may be taken concurrently.

**MISL 3202. Applied Leadership Laboratory 2. 1 cr. hr.**

Practical exercises and evaluations in military leadership skills including operational planning, quality management and inspections, and controlling small groups in realistic settings. Students develop training programs, plan training sessions, and present classes for Military Science Leadership labs. Topics include field training exercises, tactical leadership, decision making, and squad level offensive and defensive battle drills. Prereq: MISL 3200, which may be taken concurrently.

**MISL 3964. Military Science Practicum. 6 cr. hrs.**

Off-campus summer program offered at the U.S. Army Reserve Officers' Training Corps Basic Camp, Fort Knox, Kentucky. This program counts as completion of the Basic Course. The six-week program provides the student with practical leadership experience and extensive practical training in fundamental leadership and military skills. Students do not incur military obligation, do not pay expenses, but do receive pay for this training. The program is offered in lieu of MISL 1100, 1200, 2100, and 2200. Offered only during the summer. Prereq: Cons. of dept. ch.

**MISL 4001. Military Physical Training Laboratory 7. 1 cr. hr.**

This goal-oriented small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the laboratory.

**MISL 4002. Military Physical Training Laboratory 8. 1 cr. hr.**

This goal-oriented small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the laboratory.

**MISL 4100. Officership. 2 cr. hrs.**

Focuses students on three main areas: the Military Decision Making Process, the Army's Training Management System, and ethical leadership and decision making. It also covers several critical areas needed to operate effectively as an Army officer, including: coordinating activities with staffs, counseling theory and practice within the "army context.

**MISL 4101. Advanced Leadership Laboratory 1. 0 cr. hrs.**

Weekly practical exercises and preparatory periods for command staff functions, drill and ceremonies, assistant instructor roles and field training exercises. Students perform roles of cadet officers in assigned positions or tasks. Prereq: MISL 4100, which may be taken concurrently. SNC/UNC grade assessment.

**MISL 4200. Leadership and Management. 2 cr. hrs.**

Focuses on completing the transition from cadet to lieutenant. Students receive instruction on the legal aspects of decision-making and leadership, operations from the tactical to strategic level, administrative and logistical management, and a series of Capstone Seminars focusing on entering the Army as a new Lieutenant. These seminars require students, both individually and collectively, to apply their knowledge to solve problems and confront situations commonly faced by junior officers. Prereq: MISL 4100, MISL 4101 and MISL 4202, which may be taken concurrently.

**MISL 4202. Advanced Leadership Laboratory 2. 0 cr. hrs.**

Weekly practical exercises and preparatory periods for command staff functions, drill and ceremonies, assistant instructor roles and field training exercises. Students perform roles of cadet officers in assigned positions or tasks. Prereq: MISL 4200, which may be taken concurrently. SNC/UNC grade assessment.

**MISL 4995. Independent Study in Military Science and Leadership. 1-3 cr. hr.**

Independent study of special topics in Military Science under faculty supervision. Topics selected by student/faculty conference. Prereq: Cons. of dept. ch.

## Naval Science

### **NASC 1001. Drill and Information Briefing. 0 cr. hrs.**

Weekly formations focusing on Marine Corps and Navy drill, ceremonies, and inspections. Classroom instruction on special interest areas to the prospective naval officer such as financial responsibilities, career opportunities, leadership, maritime strategy and national security. Instruction and application of the fundamentals of unit organization, the chain of command, and how to properly wear and inspect uniforms. Designed to develop teamwork, leadership, management, and initiative. Required of all NROTC students. SNC/UNC grade assessment.

### **NASC 1009. Introduction to Naval Science. 2 cr. hrs.**

General introduction to seapower and the naval service. The instruction places particular emphasis on the mission, organization, regulations and broad warfare components of the Navy. Included is an overview of officer and enlisted rank and rating structures, procurement and recruitment, training and education, promotion and advancement, and retirement policies. Non-NROTC students require cons. of dept. ch.

### **NASC 1022. Sea Power and Maritime Affairs. 3 cr. hrs.**

Influence of U.S. Sea Power and Maritime Affairs on international economic and political relationships. Classroom discussions based on independent reading. Non-NROTC students require cons. of dept. ch.

### **NASC 1142. Naval Ship Systems 1. 3 cr. hrs.**

Ship design, construction, types and missions. Ship compartmentalization, interior communications, propulsion, auxiliary power and ship control systems. Elements of ship design for safe operation. Ship stability characteristics. Non-NROTC students require cons. of dept. ch.

### **NASC 1151. Navigation and Naval Operations 1. 3 cr. hrs.**

Theory, principles and procedures of ship navigation and movements. Nautical astronomy, oceanographic factors, piloting, celestial navigation, celestial sights, sextants, charts, publications, electronic aids and inertial navigation systems. Rules of the nautical road, lights, signals, and navigational aids. Non-NROTC students require cons. of dept. ch.

### **NASC 1161. Evolution of the Art of War. 3 cr. hrs.**

Military principles and concepts throughout history. Tactical and strategic applications in selected engagements. Non-NROTC students require cons. of dept. ch.

### **NASC 1181. Amphibious Warfare. 3 cr. hrs.**

Application of amphibious doctrine to battles throughout history. Non-NROTC students require cons. of dept. ch.

### **NASC 1185. Leadership and Management. 3 cr. hrs.**

Stress on experiential approach to leadership and management with military emphasis. Motivation and communication theory and practice. Group dynamics and decision making techniques. Lines of control and organizational structure. Case studies, experiential exercises and situational problems will be used. Non-NROTC students require cons. of dept. ch.

### **NASC 2152. Navigation and Naval Operations 2. 3 cr. hrs.**

Theory, principles and procedures of ship navigation, movements and employment. Tactical formations and dispositions, relative motion and maneuvering board solutions. Analysis of tactical plots for force effectiveness. Prereq: NASC 1151. Non-NROTC students require cons. of dept. ch.

### **NASC 2162. Naval Ship Systems 2. 3 cr. hrs.**

Theory and principles of operation of naval weapons systems including types, capabilities, and limitations. Theory of target detection, acquisition, identification and tracking. Principles of trajectories. Prereq: NASC 1142. Non-NROTC students require cons. of dept. ch.

**NASC 2186. Leadership and Core-Value-Based Decision-Making. 3 cr. hrs.**

Application of techniques and theories learned in NASC 1185. Practical application of sound leadership and ethics to Navy situations. Investigation of levels of ethical decision-making: legal, constitutional, utilitarian, divine. Examination of role of honor, courage and commitment in leadership. Prereq: NASC 1185. Non-NROTC students require cons. of dept. ch.

**NASC 2964. Practicum in U.S. Marine Corps Leadership and Management. 4 cr. hrs.**

Provides instruction and practical application of leadership and management techniques used in the Marine Corps and Naval Service. The course is held at the Officer Candidate School at Quantico, Virginia. S/U grade assessment. Prereq: Jr. stdng. in USMC option.

**NASC 4995. Independent Study in Naval Sciences. 1-3 cr. hr.**

Independent study of special topics in Military Science under faculty supervision. Topics selected by student/faculty conference. Prereq: cons. of dept. ch.

## Philosophy

**PHIL 1000. Logic. 3 cr. hrs.**

The goal of the course is to provide the student with an understanding of correct reasoning as it is employed in ordinary discourse. The course will study topics such as: terms and propositions, definition, opposition, induction and deduction, reasoning and argumentation, fallacies in argument. Fr stdng recommended.

**PHIL 1001. Philosophy of Human Nature. 3 cr. hrs.**

Investigation into the meaning of rational life. The course deals with the following four problem areas: human choice, human cognition, the affective, social and spiritual dimensions of the human person, and the unity of the human being. A substantive treatment of classical and Christian philosophical approaches will be included. May not be taken by first semester freshmen.

**PHIL 2310. Theory of Ethics. 3 cr. hrs.**

An investigation into the moral dimension of human life. Among the topics to be considered are the norms of morality and the general process of moral decision-making. Traditional natural law will be one of the points of view included. Prereq: Soph. stdng. and PHIL 1001.

**PHIL 3350. Philosophy of the Environment. 3 cr. hrs.**

Philosophical inquiry into nature and our impact on it. Moral, scientific, and social problems posed by global environmental crises. Selected issues in value theory, ethics and aesthetics such as ethical status of natural objects and systems, the morality of trade-offs between species, and the ethics of limiting consumption and population. Prereq: Soph. stdng., and PHIL 1001 and PHIL 2310.

**PHIL 3370. Philosophy of Art. 3 cr. hrs.**

Philosophical examination of art and its place in human life. Among possible topics are cognitive aspects of art, art and cultural understanding, the contribution of philosophy to the understanding and appreciation of art, the definition of art, art and morality, the objectivity of judgements of aesthetic value, the nature of aesthetic experience, the ontology of art, art as vehicle of social change, and the role of the artists' intentions in interpreting and evaluating works of art. Prereq: Soph. stdng. and PHIL 1001.

**PHIL 3380. Asian Philosophy. 3 cr. hrs.**

The major systems of philosophy of India and China; early Vedic and Upanishadic systems, Buddhism including Chan/Zen, Brahmanism, Hinduism, Confucianism, and Daoism. Emphasis on the key ideas in Eastern philosophy. Prereq: Soph. stdng. and PHIL 1001.

**PHIL 3410. Metaphysics. 3 cr. hrs.**

Investigation of fundamental questions about the nature of reality, especially those not amenable to purely empirical resolution. Among possible topics are theories of substance, the nature of physical objects, the existence of the soul, essences and natural necessity, time and space, the reality of possible worlds, the existence of universals, the nature of causation, and the distinction between primary and secondary qualities. Prereq: Soph. stdng and PHIL 1001.

**PHIL 3420. Philosophy of God. 3 cr. hrs.**

The idea of God; the proofs of God's existence. God's nature and attributes; foreknowledge and free will; divine action in the universe; providence and the problem of evil. An appraisal of agnosticism, atheism, pantheism. A discussion of the modern substitutions for the notion of God. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3450. Philosophy of Knowledge. 3 cr. hrs.**

Study of the sources, nature, structure, and extent of knowledge and justified belief. Among possible topics are skepticism, theories of perception, a priori knowledge, testimony as a source of knowledge, theories of truth, internalist and externalist theories of knowledge, the analysis of knowledge, and foundational and coherence theories of the structure of knowledge. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3460. Philosophy of Language. 3 cr. hrs.**

Study of fundamental issues about the nature of symbolic systems, including language. Among the possible topics are intention-based, use-based, truthconditional and verificationist theories of meaning, the indeterminacy of translation, proper names and reference, theories of definite descriptions, the nature of demonstrative and indexical expressions, and theories of metaphor. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3610. Ancient Philosophy. 3 cr. hrs.**

Examination of ancient Greek and Roman philosophy, from the pre-Socratic philosophers through the Hellenistic schools, with an emphasis on Plato and Aristotle. Including other philosophers such as Heraclitus, Parmenides, Pythagoras, Plotinus, Epicurus, Seneca and Sextus Empiricus. Issues may include the soul, immortality, knowledge, eros, and fate and freedom. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3620. Early Medieval Philosophy. 3 cr. hrs.**

Outstanding figures in Christian philosophy from Augustine in the 4th century to Thomas Aquinas in the 13th century. Medieval Jewish and Arabian philosophers in their relation to Christian thought. Selections read in translation. Prereq: Jr. stndg. and PHIL 1001.

**PHIL 3625. Late Medieval and Renaissance Philosophy. 3 cr. hrs.**

Outstanding figures and movements in late 13th and 14th centuries, and Renaissance. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3630. Pragmatism and American Philosophy. 3 cr. hrs.**

Studies the development of Philosophy within the continental United States with special emphasis on the emergence of Pragmatism as an original philosophical response to new historical conditions. Issues can include rejecting the Cartesian quest for certainty and sharp dualisms between mind and body, fact and value, language and the world, self and society; the meaning of truth; the impact of the theory of evolution on views and persons, Nature and God. Readings from authors such as Pierce, Edwards, Emerson, Mead, Addams, Bradley, Brighton, James, Dewey, Royce and contemporaries such as Richard Rorty, Cornel West, Hilary Putnam, Donald Davidson, and Alain Locke. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3640. Twentieth Century Anglo-American Philosophy. 3 cr. hrs.**

A critical examination of a number of 20th century Anglo-American philosophers and philosophic movements. Movements considered will include some of the following: "Common Sense" Philosophy, Logical Atomism, Logical Positivism, and Ordinary Language Philosophy. Philosophers treated may include G.E. Moore, Bertrand Russell, Ludwig Wittgenstein, J.L. Austin, Elizabeth Anscombe, Willard Quine, Thomas Nagel, and Saul Kripke. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3650. Early Modern Philosophy. 3 cr. hrs.**

Investigation of 17th-18th century philosophy, especially in light of individualism and scientific discovery. Philosophers may include, but not limited to, Descartes, Leibniz, Spinoza, Locke, Berkeley, Hume, and Kant. Themes may include theories of mind and matter, personal identity, God and the cosmos, and the relations amongst philosophy, science and religion. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3660. Marx and Marxism. 3 cr. hrs.**

Marx's intellectual transition from "leftist" Hegelianism to dialectical materialism; and thence, from his study of political economics to *Das Kapital*. Developments and adaptations of Marx's thought as found in thinkers representative of various schools of Marx interpretation. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3665. Phenomenology and Existentialism. 3 cr. hrs.**

Study of major figures and themes from phenomenological and existentialist traditions, such as Kierkegaard, Husserl, Heidegger, and Sartre. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3670. Nineteenth-Century German Philosophy. 3 cr. hrs.**

Examination of the philosophical developments in Germany from the post-Kantian idealism of Fichte, Schelling and Hegel to the thought of Nietzsche. Authors may include figures such as Schopenhauer and Marx. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3710. Philosophy of State. 3 cr. hrs.**

Inquiry into the nature of political society. Writings of philosophers used toward understanding of political authority; the purpose of the State, human rights and responsibilities, and the relationships between the Church and State. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3730. Philosophy of Community. 3 cr. hrs.**

Community and communication, the individual and social dimensions of personal existence, the meaning and direction of human life and social interaction. Source works in both the American and Continental traditions. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3740. Technology and the Human Condition. 3 cr. hrs.**

This course attempts to understand the nature of technology and assess its role in human life. One of its goals is to evaluate various features of modern technology, including its positive and negative impact on human beings, their physical environment and their social institutions. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3750. Philosophy of Law. 3 cr. hrs.**

An inquiry into the nature and foundation of law, with particular attention to natural law, legal positivism and rights-based theories of law, theories of punishment and responsibility, and the relationship between law and morality. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3751. Philosophy and History of Crime and Punishment. 3 cr. hrs.**

A study of crime and punishment from philosophical and historical perspectives. Crime and punishment from both the European and the American experience will be discussed. Emphasis will be placed on the interdisciplinary nature (philosophical/historical institutions) of crime and punishment. Prereq: Soph. stndg. and PHIL 1001. Same as HIST 3751 and CRLS 3751. May be counted toward the core curriculum requirement in either Philosophy or Social-behavioral Science.

**PHIL 3770. Feminist Philosophy. 3 cr. hrs.**

The history of philosophical views of women and a critical introduction to different types of feminism, e.g., liberal, existentialist, radical, Marxist, and socialist feminism. Includes such topics as feminist theory of knowledge, political theory, and ethics. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 3780. Africana Philosophy. 3 cr. hrs.**

Introduction to central philosophical issues and figures from Africa and the African Diaspora. Perennial issues in philosophy of human nature and social/political philosophy will be approached from an Africana perspective, and may include the ontological status of race, the nature of racism, the relation between race and personal identity, contemporary race relations, global feminism and the existence of a distinctly "African" philosophy. The course may include such authors as Zera Yacob, Kwame Appiah, WEB DuBois, Marcus Garvey, Frantz Fanon, Paget Henry, Sylvia Wynter, Angela Davis, Charles Mills, and Lewis Gordon. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 4000. Modern Logic. 3 cr. hrs.**

Introduction to modern symbolic logic, with primary emphasis on translation into symbolic form and natural deduction. Propositional logic and predicate logic with identity are covered. May not be taken by Engineering students to fulfill Philosophy requirement.

**PHIL 4320. Contemporary Ethical Problems. 3 cr. hrs.**

Ethical considerations such as human rights and responsibilities in social and racial justice, war and international relations, expression of dissent, and sexual conduct. Prereq: Jr. stndg. and PHIL 2310.

**PHIL 4330. Business Ethics. 3 cr. hrs.**

An application of theories of ethics to the moral dimensions of business endeavors and their effects on individuals, organizations, and society. Selected topics may include issues of responsibility, discrimination and affirmative action in the workplace, whistle blowing, economic justice, environmental impact, and the effects of the "global economy." Prereq: Jr. stndg. and PHIL 2310.

**PHIL 4335. Biomedical Ethics. 3 cr. hrs.**

Examination of fundamental ethical issues that arise in the practice of medicine and other health care professions. Among possible topics are the definition of death, the morality of suicide and euthanasia, patient-physician confidentiality, informed consent, refusal of lifesaving medical treatment, the morality of abortion, genetic engineering, human cloning, the allocation of scarce medical resources, and other issues involving health care and society. Prereq: Soph. stndg. and PHIL 2310.

**PHIL 4336. Applied Ethics for the Health Sciences. 1 cr. hr.**

An introduction to issues in professional ethics for students in the College of Health Sciences. Course is designed to provide a bridge to ethical topics covered in professional phase of study. Topics include: dignity of life, codes of medical ethics; the nature of the patient-medical provider relationship; confidentiality; the determination of patient competence; critical patient care, and justice in health care. Prereq: Enrolled in Health Sciences, Jr. stndg., and PHIL 2310.

**PHIL 4470. Philosophy of Science. 3 cr. hrs.**

Examination of fundamental epistemological and metaphysical issues that arise in the practice of science. Among possible topics are theories of scientific method, problems of confirmation, models of scientific explanation, scientific revolutions, the observational-theoretical distinction, the reality of theoretical entities, the relation between science and religion, science and art, and the limits of scientific knowledge. Prereq: Soph. stndg., PHIL 1001, and two semesters of science.

**PHIL 4510. Philosophy of Religion. 3 cr. hrs.**

Philosophical reflections on religious activity and commitment. One or more of the following will be examined: religious experience, faith and understanding, religious use of language, the meaning of transcendence, prayer and worship, belief and unbelief. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 4530. Philosophy of History. 3 cr. hrs.**

Meaning of history. Relation to philosophy and other disciplines. Possibility of a philosophy and theology of history. Prereq: Soph. stndg. and PHIL 1001.

**PHIL 4540. Philosophy of Education. 3 cr. hrs.**

Critical examination of important principles, methods and conclusions of various philosophies and their implications for education. Attention to professional ethics and students' development of their own philosophies of education. This course is equivalent to EDUC 4540. Prereq: Jr. stndg. and PHIL 1001.

**PHIL 4931. Topics in Philosophy. 1-3 cr. hr.**

Prereq: Jr. stndg. and PHIL 1001.



**PHIL 4953. Undergraduate Seminar. 3 cr. hrs.**

Designed to initiate a selected group of qualified undergraduates in the technique and discipline of scholarly research by concentrated work in a restricted field. Critical reading and analysis of sources. Specific subjects of seminars to be announced in the Schedule of Classes. Prereq: Jr. stdng., PHIL 1001, and cons. of instr.

**PHIL 4995. Independent Study. 1-3 cr. hr.**

Prereq: Jr. stdng., PHIL 1001, and cons. of dept. ch.

**PHIL 4999. Senior Thesis. 3 cr. hrs.**

Preparation of a thesis by approved students under direction of an adviser. Prereq: Cons. of dept. ch.

## Physics

**PHYS 1001. General Physics 1. 4 cr. hrs.**

Newton's laws, linear motion, circular and harmonic motion, fluids, heat, kinetic theory, wave motion and sound. 3 hrs. lec., 2 hrs. lab., 1 hr. quiz. Prereq: High school algebra, geometry, and trigonometry or equivalent.

**PHYS 1002. General Physics 2. 4 cr. hrs.**

Continuation of PHYS 1001. Electrostatics, DC circuits, magnetism, electromagnetic induction, light, optical instruments, interference and diffraction of light, modern physics. 3 hrs. lec., 2 hrs. lab., 1 hr. quiz. Prereq: PHYS 1001.

**PHYS 1003. General Physics with Introductory Calculus 1. 4 cr. hrs.**

Survey of classical physics for science and engineering majors. Kinematics in one and two dimensions. Newton's laws of motion and dynamics, including rotation of rigid bodies. Energy concepts in physical systems. Newton's law of universal gravitation. The first law of thermodynamics, harmonic motion, and Einstein's special relativity. A command of high school algebra, geometry and trigonometry is assumed. Requires the use of introductory calculus. 3 hrs. lec., 2 hrs. lab., 1 hr. dis. Prereq: MATH 1450 can be taken concurrently.

**PHYS 1004. General Physics with Introductory Calculus 2. 4 cr. hrs.**

A continuation of PHYS 1003. A survey of classical electromagnetic theory, with an introduction to modern physics. Electricity and magnetism: Coulomb's law, Gauss' law, the electric field and the electric potential, DC circuits, Ampere's law, Faraday's law, electromagnetic waves. Classical and quantum waves, interference, thermodynamics and an introduction to statistical mechanics. 3 hrs. lec., 2 hrs. lab., 1 hr. dis. Prereq: MATH 1450 and PHYS 1003 or PHYS 1013. MATH 1451 or MATH 1455, can be taken concurrently.

**PHYS 1005. Perspectives in Physical Sciences. 3 cr. hrs.**

Basic concepts in the physical sciences and their impact on technology, the humanities and the world. Course designed for non-science majors. This course satisfies the Arts and Sciences College Curriculum Natural Science requirement.

**PHYS 1007. Survey of Meteorology. 3 cr. hrs.**

An introduction to the science of the atmosphere as it relates to the weather of the earth. Topics will include the gas laws, heat transfer, causes of the seasons, atmospheric optics, humidity, clouds, atmospheric stability, causes of precipitation, atmospheric motions, air masses, fronts and pressure systems, thunderstorms, tornados, and hurricanes. Emphasis will be put on how weather is forecast and how it relates to everyone's life. This course satisfies the Arts and Sciences College Curriculum Natural Science requirement.

**PHYS 1008. Astronomy and Space Physics. 3 cr. hrs.**

Physics of the solar system, stars, galaxies and the universe. Experimental methods of observational astronomy, telescopes, and space probes. Special topics such as black holes, neutron stars, and quasars. 3 hrs. lec. or 3 hrs. lec. 1 hr. rec. This course satisfies the Arts and Sciences College Curriculum Natural Science requirement.

**PHYS 1009. Earth and Environmental Physics. 3 cr. hrs.**

Impact of human activities on the terrestrial environment. Population distribution and growth. Energy balance of the earth. Energy, land and water use, the water cycle. Effects of chemical and physical pollutants on water and the atmosphere. Course designed for non-science majors. 3 hrs. lec. or 3 hrs. lec., 1 hr. rec. This course satisfies the Arts and Sciences College Curriculum Natural Science requirement.

**PHYS 1013. Classical and Modern Physics with Calculus 1. 4 cr. hrs.**

A study of motion in its various forms, translational, rotational, and vibrational, that emphasizes their underlying unity, especially the central role of energy and its conservation, and their basis in the fundamental Newtonian laws of motion and Einstein's special relativity. These ideas are used to explain thermal processes. 3 hrs. lec., 2 hrs. lab., 1 hr. quiz. Prereq: MATH 1450, which may be taken concurrently. A command of high school algebra, geometry, trigonometry is assumed. Requires the use of introductory calculus. Students cannot receive credit for both PHYS 1003 and PHYS 1013.

**PHYS 1014. Classical and Modern Physics with Calculus 2. 4 cr. hrs.**

This course, continuing the development of energy as a fundamental concept, includes a study of electric and magnetic phenomena, and their unification in the theory of electromagnetism. Applications are made to waves, geometric and physical optics, atomic spectra, and nuclear decay and introductory quantum mechanics including wave function and bound systems. 3 hrs. lec., 2 hrs. lab., 1 hr. quiz. Prereq: MATH 1450, MATH 1451 or MATH 1455 which may be taken concurrently, and PHYS 1003 or PHYS 1013. Students cannot receive credit for both PHYS 1004 and PHYS 1014.

**PHYS 1018. Introduction to Research. 0 cr. hrs.**

An overview of research activity, specialties, and opportunities for undergraduate research is provided through an in-depth visit each week to a different research laboratory at Marquette University and the Medical College of Wisconsin. All science students interested in learning about research are encouraged to take this course. SNC/UNC grade assessment.

**PHYS 1020. Physics Laboratory Only. 1 cr. hr.**

Prereq: Cons. of dept. ch.

**PHYS 1030. Physics Lecture Only. 1-6 cr. hr.**

Prereq: Cons. of dept. ch.

**PHYS 2004. Modern Physics: Atoms, Particles, and Quanta. 3 cr. hrs.**

A survey of 20th century physics concentrating on atoms and particles. Quantum mechanics: origins, the Schrodinger equation, the hydrogen atom, many-electron atoms and angular momentum. Introduction to special relativity. Nuclear structure, radioactivity, nuclear reactions, fission and fusion. Elementary particles, conservation laws, reactions, the Standard Model, and cosmology. Prereq: MATH 2450 and PHYS 1002; MATH 2450 and PHYS 1004; or MATH 2450 and PHYS 1014. Prerequisites may be taken concurrently.

**PHYS 2005. Modern Physics: The States of Matter. 3 cr. hrs.**

A survey of the physics of matter and materials. Atoms and the forces between them, molecules, the states of matter, kinetic theory, perfect and imperfect gases. Statistical physics: classical statistics and the Boltzmann factor, quantum statistics. The solid state: cohesion and structure, electrical, magnetic, thermal and elastic properties. The liquid state: cohesion and structure, latent heat and melting, flow in ideal and real liquids. Prereq: MATH 2450 and PHYS 1002; MATH 2450 and PHYS 1004; or MATH 2450 and PHYS 1014. Prerequisites may be taken concurrently.

**PHYS 2048. Mathematical Methods for Physicists. 3 cr. hrs.**

This course presents mathematical methods applied to physical problems including Fourier Analysis, special functions, eigenvalue problems, the calculus of variations, probability and statistics. Prereq: MATH 2451 and PHYS 1004 or MATH 2451 and PHYS 1014.

**PHYS 2049. Computational Physics. 3 cr. hrs.**

Computational techniques applied to problems in the physical sciences. Construction of models of physical systems. Generation and analysis of data. The role of models in developing physical theories. Course assignments will use a variety of programming environments and commercial software. Prereq: PHYS 2048.

**PHYS 2055. Electronics Lab. 2 cr. hrs.**

Introduction to electronic measuring equipment and circuits. Voltmeters, ammeters, ohmmeters, oscilloscopes, DC and AC circuits, resistance, impedance, passive and active filters, power supplies, op-amps, amplifiers, and analog-digital conversion. An introduction to error analysis and precision of measurement. 1 hr. lec., 3 hrs. lab. Prereq: PHYS 1004 or PHYS 1014.

**PHYS 3011. Classical Mechanics. 3 cr. hrs.**

Three-dimensional motion of a particle in both Cartesian and spherical coordinate systems. Newtonian dynamics, the classical harmonic oscillator, central forces. Lagrange and Hamilton's formulations of analytical mechanics, angular momentum, Kepler's problem, and the dynamics of a rigid body. Coupled oscillators. Prereq: MATH 2451 and PHYS 1002; MATH 2451 and PHYS 1004; or MATH 2451 and PHYS 1014. Prerequisites may be taken concurrently.

**PHYS 3021. Introduction to Theoretical Astrophysics. 3 cr. hrs.**

Introduction to astrophysical problems, with emphasis on underlying physical principles; includes the nature of stars, equations of state, stellar energy generations, stellar structure and evolution, astrophysical neutrinos, binary stars, white dwarfs, neutron stars and pulsars and novae and supernovae. This course does not count towards the physics major. Prereq: PHYS 1013 and PHYS 1014 or PHYS 1003 and PHYS 1004 or PHYS 1001 and PHYS 1002 and cons. of instr.

**PHYS 3022. Introduction to Observational Astronomy. 3 cr. hrs.**

Nature of the Milky Way galaxy from an observer's perspective: stellar statistics and distributions, stellar populations, spiral structure, the nucleus and halo. Nature of ordinary galaxies, galaxies in our Local Group, structure of voids and superclusters. Nature of peculiar objects: Seyfert galaxies, starburst galaxies, and quasars. Elementary aspects of physical cosmology. Introduction to techniques used in modern optical and radio astronomy with emphasis on the physical and mathematical understanding of the detection of electromagnetic radiation. Prereq: PHYS 1013 and PHYS 1014 or PHYS 1003 and PHYS 1004 or (PHYS 1001 and PHYS 1002 and cons. of instr.) and PHYS 2004 and PHYS 3021.

**PHYS 3056. Contemporary Physics Lab 1. 2 cr. hrs.**

Experiments in molecular, nuclear, atomic, solid state physics, and in geometrical and physical optics. Application of error analysis, precision of measurement, and propagation of errors. 1 hr. lec., 3 hrs. lab. Prereq: PHYS 2055.

**PHYS 3953. Biophysics Seminar. 1 cr. hr.**

The frontiers of research in biophysics, and the techniques employed, are explored through attending the weekly Biophysics Seminar at the Medical College of Wisconsin and participating in a follow-on discussion after each seminar. Prereq: Jr. stndg. May be taken more than once for credit. This course may not be used to satisfy the 30 cr. hr. minimum requirements for a bachelor's degree in physics.

**PHYS 3995. Undergraduate Research. 1-3 cr. hr.**

Experimental or theoretical research in an area of contemporary physics under the guidance of a physics faculty member who has expertise in that area. Successful completion of the course includes a summary paper and an oral presentation to the regular physics faculty. This course may not be used to satisfy the 30 cr. hr. minimum requirements for a bachelor of science in physics. Prereq: Jr. stndg. and cons. of dept. ch.; cons. of a regular physics faculty member.

**PHYS 4012. Quantum Mechanics. 3 cr. hrs.**

Quantum states, state vectors, observables and operators. The formal structure of quantum mechanics. Time evolution of the state vector. The Hamiltonian. Position and momentum representations, and the wave function. One-dimensional wave mechanics and the harmonic oscillator. Three-dimensional wave mechanics. Symmetry, angular momentum, and the hydrogen atom. Fermions, and bosons. Perturbation methods. Prereq: MATH 2451 and PHYS 2004 or MATH 2451 and PHYS 1014.

**PHYS 4024. Modern Optics. 3 cr. hrs.**

Geometric optics, classical wave theory of optics, interference, diffraction, polarization, electromagnetic theory of light, interaction of light and matter, lasers and coherence. Prereq: MATH 1451 and PHYS 1002; or MATH 1451 and PHYS 1004; or MATH 1451 and PHYS 1014.

**PHYS 4031. Electricity and Magnetism 1. 3 cr. hrs.**

Electrostatics: Coulomb's law and Gauss' law. The electric field in dielectric materials. Microscopic theory of Ohm's law and steady state currents. The magnetic field, Biot-Savart law, Ampere's law, the vector potential. Magnetic materials. Electromagnetic induction, Faraday's law. Maxwell's equations and electromagnetic waves. Prereq: MATH 2450 and PHYS 1002; or MATH 2450 and PHYS 1004; or MATH 2450 and PHYS 1014.

**PHYS 4032. Electricity and Magnetism 2. 3 cr. hrs.**

Boundary value problems: The solution of electrostatic and magnetostatic problems in continuous media. Microscopic theories of the dielectric and magnetic properties of materials. Electromagnetic waves in bounded regions. Reflection, refraction and dispersion. Radiation from accelerated charges. Antennae. Electrodynamics and the theory of special relativity. Prereq: PHYS 4031.

**PHYS 4046. The Physical Basis of Biological Structure and Function. 3 cr. hrs.**

The molecular processes of life occur in a complex aqueous molecular environment. Biological molecules and their environments are governed by the universal laws of nature which are the backbone of the principles of physics. Applies introductory physics and chemistry to present the physical basis of biological structure (size limitations, molecular orientation and signaling and cell-cell communication) and the physical basis of biological function (exocytosis/endocytosis, fusion/fission, active/passive transport). Describes the basic experimental techniques used to infer the dynamics of molecular life processes. Prereq: PHYS 1002, 1004 or 1014 and CHEM 1002.

**PHYS 4057. Contemporary Physics Lab 2. 2 cr. hrs.**

Continuation of the experiments in PHYS 3056. Measurement and propagation of uncertainty, curve fitting, automated data collection and experiment control. 1 hr. lec., 3 hrs. lab. Prereq: PHYS 3056.

**PHYS 4062. Introduction to Thermodynamics. 3 cr. hrs.**

Fundamental concepts of thermodynamics: temperature, internal energy, entropy and thermodynamic potentials. Laws of thermodynamics, their consequences and applications. Introduction to statistical thermodynamics. Prereq: MATH 2450 and PHYS 2005.

**PHYS 4065. Experimental Methods in Molecular Biophysics. 3 cr. hrs.**

An introduction to the field of biological physics which develops the science and illustrates the applications of the techniques of X-ray diffraction and spin channels and transport through cell membranes. Prereq: PHYS 2004 and PHYS 4031, or PHYS 4046.

**PHYS 4071. Atomic Physics. 3 cr. hrs.**

Quantum mechanics of one and many electron atoms. Spin, orbital, and total angular momentum. Atoms in electric and magnetic fields, the Stark effect and the Zeeman effect. Atomic transitions, symmetry and selection rules. The periodic table and shell structure. Modern spectroscopy. Prereq: PHYS 4012 and PHYS 4031.

**PHYS 4072. Introduction to Nuclear and Elementary Particle Physics. 3 cr. hrs.**

Experimental methods in nuclear and particle physics. Theories of nuclear structure, radioactivity, decay schemes, fission and fusion models, conservation laws. Elementary particle classifications and the Standard Model. Prereq: PHYS 4012.

**PHYS 4075. Introduction to Solid State Physics. 3 cr. hrs.**

Crystal structure of solids, the reciprocal lattice and diffraction. Lattice vibrations and thermal properties. Electrons in metals, band structure and semiconductors. The Fermi surface. Dielectric and magnetic properties of solids. Superconductivity. Prereq: PHYS 2005 and PHYS 4012.

**PHYS 4931. Topics in Contemporary Physics. 3 cr. hrs.**

Topics drawn from areas of current interest such as astrophysics, atmospheric physics, condensed matter physics or particle physics. This course may not be used to satisfy the 30 cr. hr. minimum requirements for a bachelor of science in physics. Prereq: Cons. of dept. ch.

**PHYS 4953. Seminar in Physics. 1 cr. hr.**

Critical analysis of the original works of scientists who have made significant contributions to Physics. This course may not be used to satisfy the 30 cr. hr. minimum requirements for a bachelor of science in physics. Prereq: Cons. of dept. ch.

**PHYS 4995. Independent Study in Physics. 1-3 cr. hr.**

Independent study of special topics in physics under faculty supervision. Topics selected by students. This course may not be used to satisfy the 30 cr. hr. minimum requirements for a bachelor of science in physics. Prereq: Cons. of dept. ch.

**PHYS 4999. Senior Thesis. 2 cr. hrs.**

Independent research under the guidance of physics faculty. The topic may be chosen from any area of physics. Successful completion of the course includes a written thesis on the research and an oral presentation. This course may not be used to satisfy the 30 cr. hr. minimum requirements for a bachelor of science in physics. Prereq: Sr. stndg. and cons. of dept. ch.; cons. of a regular physics faculty member.

**Political Science****POSC 2201. American Politics. 3 cr. hrs.**

Problems of organizing and using governmental power at the national level. The principles of the U.S. Constitution. The Presidency, Congress and the federal judiciary. Public opinion, elections, political parties and interest groups. Issues of public policy.

**POSC 2401. Comparative Politics. 3 cr. hrs.**

Types of government, ranging from democratic to totalitarian. The parliamentary alternative to presidential democracy. Political modernization and revolution.

**POSC 2601. International Politics. 3 cr. hrs.**

Patterns of interaction among nations and subnational and supranational entities. Cooperation and conflict. National interest, elements of power and war. Morality and human rights issues; economic, environmental, and resource issues in world politics. Recent developments and their impact.

**POSC 2801. Justice and Power. 3 cr. hrs.**

Explores the difference between justice and power with special reference to the authority of a higher law or principle of right; selections from the works of Thucydides, Plato, Machiavelli and others are read.

**POSC 3953. Undergraduate Seminar: 3 cr. hrs.**

Designed to initiate a selected group of qualified undergraduates in the techniques and discipline of scholarly research by concentrated work in a restricted field. Students pursue course reading in preparation of reports, while working under close supervision of a professor. Course intended primarily for Political Science majors, but other qualified students may apply. Specific subjects of seminars to be announced in the Schedule of Classes. Prereq: Jr. stdng. and cons. of instr.

**POSC 4191. The Logic of Social Inquiry: The Kennedy Assassination. 3 cr. hrs.**

The Kennedy Assassination. The question of who killed President John F. Kennedy, and whether there was a conspiracy. The physical evidence; eyewitness testimony; Lee Harvey Oswald, Jack Ruby, and suspected conspirators. The logic of social inquiry, and how we can approach "conspiracy" as an hypothesis to be tested. Prereq: POSC 2201 or Jr. stdng.

**POSC 4195. Politics of the Internet. 3 cr. hrs.**

The origins and growth of the Internet. Legal and regulatory dilemmas posed by the Internet. The impact of the Internet on politics, society and economics. Prereq: POSC 2201 or POSC 2401 or POSC 2601 or POSC 2801 or Jr. stdng.

**POSC 4201. The United States Congress. 3 cr. hrs.**

Membership, legislative process, and internal distribution of power in the U.S. Congress. Congressional relationships with the presidency, executive bureaucracy, interest groups, and public. Prereq: POSC 2201 or Jr. stdng.

**POSC 4211. The American Presidency. 3 cr. hrs.**

The evolution and contemporary status of the American presidency. Presidential elections, policy-making, advisory systems, and relationships with Congress, the bureaucracy, and the courts. Problems and techniques of decision making. Prereq: POSC 2201 or Jr. stdng.

**POSC 4212. American Political Parties. 3 cr. hrs.**

Examines the nature and development of American political parties. Traces continuity and change in the American party system beginning in the early Republic, assessing the rise and fall of the Whigs, the dynamic between machine politics and progressive reform, and the shifts in party ideas and policy stances that inform contemporary political debates. The question of ideological change in American political parties is further explored by contemporary work on factions, polarization, and culture war. Assesses changes to the parties as organizations in the wake of reforms to the candidate selection process from an institutional perspective. Explores the question of how American political parties compare to their counterparts in other advanced industrial democracies. Prereq: POSC or Jr. stdng.

**POSC 4213. Elections, Public Opinion and Participation. 3 cr. hrs.**

Covers explanations for political behavior at the individual, group, and national levels. Begins with an examination of public opinion and political attitudes, followed by questions about voter turnout, political participation, and theories of voter choice. Culminates in a unit exploring perspective on how to explain and interpret election outcomes. Prereq: POSC 2201 or Jr. stdng.

**POSC 4216. American Public Policy. 3 cr. hrs.**

U.S. domestic policy with special attention to the politics of national policy in the areas of the economy, social welfare, and the environment. The stages of the policy process: agenda-building, formation, budgeting, implementation, and evaluation. Prereq: POSC 2201 or Jr. stdng.

**POSC 4221. Interest Group Politics. 3 cr. hrs.**

How groups are organized around particular economic interests and political preferences in order to influence policy-making institutions. The internal incentive structure of political organizations, including business, professional, trade union, and "public interest" groups. Functions of, and biases inherent in, the group process. Offered only at Les Aspin Center. Prereq: POSC 2201 or Jr. stdng.

**POSC 4231. Political Organizations. 3 cr. hrs.**

Political parties, social movements, interest groups, and civic associations. How citizens organize themselves to participate in the political process. How democratic institutions resolve the tension between individual citizenship and collective action. Explores theories of mobilization, questions of influence, and explanations of success. Prereq: POSC 2201; or Jr. stdng.

**POSC 4241. Constitutional Law: Separation of Powers, Federalism and Rights. 3 cr. hrs.**

A detailed introduction to constitutional law. Examines the main themes of the United States' constitutional structure - popular sovereignty, separation of powers, federalism and the development and maintenance of rights - as well as some basic and contested techniques of constitutional interpretation. Prereq: POSC 2201 or Jr. stdng.

**POSC 4251. Civil Liberties and Rights. 3 cr. hrs.**

Examines the development of civil rights and liberties over the course of American political history. What constitutes as a right or a liberty is contested terrain. Expanding, contracting, or otherwise altering the meaning of a right or a liberty involves a range of actors in a variety of venues, not only the courts. Therefore, we will examine the traditional list of civil liberties and civil rights that define American politics from a "law and society" perspective, which focuses on the content of judicial rulings as well as on the political processes involved in drafting legislation and in grassroots mobilization around these rights and liberties. Prereq: POSC 2201 or Jr. stdng.

**POSC 4281. Urban Public Policy. 3 cr. hrs.**

Conditions in American cities and the extent to which they can be improved by political activity. Race relations, ethnicity and class and their effects on housing, education and income. Prereq: POSC 2201 or Jr. stdng.

**POSC 4291. Urban Politics. 3 cr. hrs.**

Urban governmental structures and techniques of gaining power in urban areas. The role of elected and appointed officials, political parties, economic elites, neighborhood organizations, and ethnic groups in urban politics. Prereq: POSC 2201 or Jr. stdng.

**POSC 4321. Business and Politics. 3 cr. hrs.**

Business participation in the policy making process. Business as a political actor. The regulation of business. Political influence of business. Constraints on business power. Business politics in historical perspective. Prereq: POSC 2201; or Jr. stdng.

**POSC 4331. Politics and Regulation. 3 cr. hrs.**

Economic and social regulation in America. Why we have regulations. Who is regulated. Who does the regulating. What the consequences of regulation are. Primary focus on business regulation and related topics. Prereq: POSC 2201; or Jr. stdng.

**POSC 4341. Politics of American Capitalism. 3 cr. hrs.**

Political economy of U.S. history. Individuals, firms, and business associations and their role in politics. Economic development and conflict as sources of political change. Prereq: POSC 2201; or Jr. stdng.

**POSC 4361. Politics of Race, Ethnicity, and Gender. 3 cr. hrs.**

The role of African-Americans, Asian Americans, Hispanics, white ethnics, American Indians, and women in shaping American politics through elections, political parties, and public office. The nature and impact of political organizations representing these groups. Prereq: POSC 2201 or Jr. stdng.

**POSC 4366. Religion and Politics. 3 cr. hrs.**

Religion and politics in contemporary America. The historic patterns and current interactions of religious movements, denominations, and individuals involved in American politics. Specific attention given to the rationales used for religious involvement in politics, the types of political behavior employed, and the consequences of that behavior. Prereq: POSC 2201 or Jr. stdng.

**POSC 4371. Media and Politics in the U.S.. 3 cr. hrs.**

Explores role and power of media in American political systems; history and development of national press, including court interpretations of freedom of the press; quality and impact of political reporting, with emphasis on election coverage; and media's relationships with other political actors. Prereq: POSC 2201 or Jr. stndg.

**POSC 4376. American National Security Policy. 3 cr. hrs.**

Defense policy processes in the United States; issues in defense decision-making, including the roles of the public, interest groups, Congress, the President, and executive agencies, with emphasis on the defense establishment; U.S. strategic doctrines since World War II; budgeting; civil-military relations. Prereq: POSC 2201 or Jr. stndg.

**POSC 4406. Public Policy in Industrial Democracies. 3 cr. hrs.**

Politics of public policies in democratic political systems, with special attention to North America, Western Europe, and Japan. Alternative theoretical perspectives on the problem of social choice in democracies. Problems and policies in the areas of the economy, education, health, welfare, and the environment. Prereq: POSC 2401 or Jr. stndg.

**POSC 4411. Politics, Economics, and Democracy. 3 cr. hrs.**

The relationship between capitalism and democracy. The impact of economic factors on politics. The political consequences of the organization and power of private business. The impact of democratic politics and political institutions on economic actors and performance in capitalist democracies. Prereq: POSC 2401; or Jr. stndg.

**POSC 4421. Democracy, Authoritarianism, and Totalitarianism. 3 cr. hrs.**

Three "ideal types" of political systems, and their manifestations in countries at different points in time. Topics include power, legitimacy, ruling elites, institution, and economics. Examination of political system change through coup, revolution, and peaceful transition. Prereq: POSC 2401 or Jr. stndg.

**POSC 4431. Modern Revolutions. 3 cr. hrs.**

Types and causes of revolutions. Modern case studies. The American, French, Russian, German and selected "Third World" revolutions, with attention to ideas, institutions, socio-economic conditions, and the nature of actual changes. Prereq: POSC 2401 or Jr. stndg.

**POSC 4441. Designing Liberal Democracy. 3 cr. hrs.**

Exploring liberal democracy in theory practice, especially as concerns emerging democracies in the developing world. Includes consideration of the impact of economic development, ethnicity, language, Legacies of colonialism and/or indigenous political organization, internal democracy, corruption, strategic location and institutional design. Prereq: POSC 2401 or Jr. stndg.

**POSC 4451. Comparative Judicial Politics. 3 cr. hrs.**

Provides a detailed introduction to the empirical and normative debates surrounding judicial power including origins of judicial review, courts as strategic actors and the development of stronger courts over time in American and comparative context. Focuses on the development of rule of law, and in particular, how the court as a governing institution interacts with legislative and executive powers. POSC 4241 recommended.

**POSC 4501. European Politics. 3 cr. hrs.**

Nationalism and European identity; evolution of executive and legislative institutions; political parties; ongoing changes in the welfare state and state socialism; transformation of class structure; the challenge of post-industrial society. Include both Eastern and Western Europe. Prereq: POSC 2401 or Jr. stndg.

**POSC 4511. Russian and Post-Soviet Politics. 3 cr. hrs.**

Developments in Russia and the other countries which emerge from the collapse of the Soviet Union. Brief coverage of tsarist and Soviet politics, with a particular emphasis on reasons for the USSR's collapse and Soviet legacies, followed by an overview of domestic and international politics in the region. Prereq: POSC 2401 or Jr. stndg.



**POSC 4521. Chinese Politics. 3 cr. hrs.**

Origins of the Chinese Revolution, political change and conflict in post-1949 China, and the contemporary political system and political developments. Prereq: POSC 2401 or Jr. stndg.

**POSC 4531. Japanese and Korean Politics. 3 cr. hrs.**

Political culture, unique patterns of modernization, and the contemporary political system in Japan and the two Koreas. Prereq: POSC 2401 or Jr. stndg.

**POSC 4541. Latin American Politics. 3 cr. hrs.**

Government and politics in major Latin American countries. The politics of social change and development, seizures of power and rule by the military, and the role of external factors. Prereq: POSC 2401 or Jr. stndg.

**POSC 4551. Politics of the Indian Subcontinent. 3 cr. hrs.**

The British in India; the Indian nationalist movement and the Hindu-Muslim struggle; political systems in India and Pakistan; the creation of Bangladesh; linguistic, economic, and social issues in South Asia. Prereq: POSC 2401 or Jr. stndg.

**POSC 4561. Politics of the Developing World. 3 cr. hrs.**

Politics of agricultural development, industrialization, military intervention, and social and cultural conflict in Third World Countries. Prereq: POSC 2401 or Jr. stndg.

**POSC 4601. International Law. 3 cr. hrs.**

Law among states in peace and war. Historical background and political foundations of international law. The influence of judicial decisions, international courts and organizations, treaties, and practices of states upon the growing body of international law. Prereq: POSC 2601 or Jr. stndg.

**POSC 4611. International Organization. 3 cr. hrs.**

Development and characteristics of international organizations. Functions of the League of Nations, the United Nations, and other organizations. Major contributions to international peace. Main political and legal problems. Prereq: POSC 2601 or Jr. stndg.

**POSC 4621. Politics of the World Economy. 3 cr. hrs.**

Political and economic dynamics of the world economy; historical and theoretical roots; international trade and monetary relations and the impact of hegemony, interdependence, regimes, and domestic politics; trade, debt, multinational corporations, and the dynamics of dependency and development; communism, capitalism, and change. Prereq: ECON 2004 and POSC 2601 or Jr. stndg.

**POSC 4631. World Conflict and Security. 3 cr. hrs.**

Classical and contemporary theories of war and peace; just and unjust wars; principles of strategic analysis, arms control, and security policy-making; the proliferation of nuclear, chemical, and biological weapons. The international trade in arms; nationalism, ethnic conflict, and wars of secession. Prereq: POSC 2601 or Jr. stndg.

**POSC 4641. Politics of the Illicit Global Economy. 3 cr. hrs.**

Political and economic dynamics of the illicit dimension of the global economy; historical and theoretical roots; state efforts to control illicit flows of goods and services including drug trafficking, arms smuggling, illegal migration, traffic in women and children, money laundering; exploration of transnational organized crime as a challenge to state power. Prereq: POSC 2601 or Jr. stndg.

**POSC 4661. The Political Economy of Development. 3 cr. hrs.**

Introduces interaction between politics and economics in developing countries by examining political and economic development (and underdevelopment) through the lenses of the principal theoretical debates and substantive issues. Areas of inquiry include the general theories that underpin the study of the processes of economic and political reform, the roles of international and domestic institutions, and the influence of private interests including business, labor and civil society organizations. Substantive issues include poverty, conflict, human rights, foreign aid, investment and the environment. Prereq: ECON 2004 and either POSC 2601 or Jr. stndg.

**POSC 4701. United States Foreign Policy. 3 cr. hrs.**

Objectives of American foreign policy. Problems facing the United States in its relations with other countries. Trade, aid, propaganda and alliances as instruments of foreign policy. Prereq: POSC 2601 or Jr. stndg.

**POSC 4711. International Politics of Europe. 3 cr. hrs.**

Evolution of the post-war settlement in Europe. Western European and Eastern European integration, relations between Western and Eastern Europe, Europe and the superpowers, French-German and intra-German relations, Europe and the Third World, European security issues. Prereq: POSC 2601 or Jr. stndg.

**POSC 4721. International Politics of the Middle East. 3 cr. hrs.**

Historical and religious background of Middle East politics; comparative ideologies and political systems in the Middle East; Arab-Israeli relations; Persian Gulf politics; politics in the Maghreb; great power interests in the region. Prereq: POSC 2601 or Jr. stndg.

**POSC 4731. International Politics of Asia. 3 cr. hrs.**

Principal patterns and problems of international politics in Asia, including international political economy, development and security issues, and the impact of global trends. Regional focus varies with instructor. Prereq: POSC 2401 or POSC 2601 or Jr. stndg.

**POSC 4741. United States-Latin American Relations. 3 cr. hrs.**

United States response to reform and revolutionary movements and governments in Latin America. The politics of trade, foreign investment, foreign assistance, and human rights. Prereq: POSC 2601 or Jr. stndg.

**POSC 4801. Citizens, Beasts, or Gods?. 3 cr. hrs.**

Evaluates the comparative congeniality to mankind of pre-political 'states of nature,' political citizenship, and the life of philosophy; selections from the works of Rousseau, Nietzsche, Chesterton and Aristotle are read. Prereq: POSC 2801 or Jr. stndg.

**POSC 4811. The Best Constitution. 3 cr. hrs.**

Examines the relationship between constitutional design and human flourishing; selections from the works of Plato and others are read. Prereq: POSC 2801 or Jr. stndg.

**POSC 4821. Democracy and Its Problems. 3 cr. hrs.**

Diagnoses the instability of popular governments in antiquity and considers the remedy provided by the American constitutional republic; selections from the works of Thucydides, Publius, Tocqueville and others. Prereq: POSC 2801 or Jr. stndg.

**POSC 4841. Enlightenment Political Thought. 3 cr. hrs.**

The Enlightenment's contribution to modern doctrines of individual rights, representative government, popular sovereignty, free enterprise, religious toleration, and freedom of speech. Authors such as Locke, Voltaire, Hume, Publius, Rousseau and Burke. Prereq: POSC 2801 or Jr. stndg.

**POSC 4851. Karl Marx. 3 cr. hrs.**

Primary works on freedom and alienation, history, capitalism, revolution, and socialism that have inspired Marxist movements. Prereq: POSC 2801 or Jr. stndg.

**POSC 4861. The Political Philosophy of Capitalism. 3 cr. hrs.**

Is capitalist society just or unjust? Does capitalism promote or inhibit the realization of freedom? Does capitalism promote or inhibit the pursuit of human excellence? Authors such as Rousseau, Adam Smith, Marx, Weber. Prereq: POSC 2801; or Jr. stndg.

**POSC 4871. Politics and Literature. 3 cr. hrs.**

Study of the central questions of political philosophy through the lens of literature, with special focus on how literature approaches the questions of the best regime and the best type of human life. Prereq: POSC 2801 or Jr. stndg.

**POSC 4881. Postmodern Politics. 3 cr. hrs.**

Nietzsche and his successors on the insufficiency of modern ethics and modern politics since the Enlightenment. Focus on the postmodern critique of modernity's contributions to consumerism, globalization and technology. Prereq: POSC 2801 or Jr. stndg.

**POSC 4931. Topics in Political Science. 2-3 cr. hrs.**

Lectures and discussion in a broad area which, because of its topicality, is not the subject of a regular course. May be taken a maximum of three times. Prereq: Jr. stndg.

**POSC 4986. Internship in Political Science. 1-4 cr. hr.**

Practical learning experience in politics. Evaluation will require the student to relate the experience to literature on the subject. Arrangements to be worked out by student, faculty member and agency concerned. Normally may be taken once. In some circumstances (as defined by department policy), a second internship may be taken for university elective credit. The 4-credit section is limited to students in the Les Aspin Center for Government program. S/U grade assessment. Prereq: POSC 2201 or Jr. stndg.; 2.500 MU GPA; and cons. of dept. ch.

**POSC 4995. Independent Study in Political Science. 1-3 cr. hr.**

Prereq: Jr. stndg., cons. of instr., and cons. of dept. ch.

**POSC 4999. Senior Thesis. 3 cr. hrs.**

Preparation of a thesis by approved students under the direction of an adviser. Prereq: Sr. stndg., POSC 4995, which may be taken concurrently, and cons. of dept. ch. Three semester hours of POSC 4995 are required.

## Psychology

**PSYC 1001. General Psychology. 3 cr. hrs.**

Introduction to scientific psychology: biological bases of behavior; perception; principles of learning; intelligence and personality testing; current theories of personality; conflict, adjustment and mental health; interpersonal relations; social processes; applications of psychological principles to human affairs. Three hours of classroom instruction and one optional discussion hour for review of exams and special assistance with selected areas of course content.

**PSYC 2001. Psychological Measurements and Statistics. 4 cr. hrs.**

Logic and rationale of psychological measurement. Scales of measurement and statistical techniques. Descriptive statistics, the normal distribution and sampling theory, introduction to statistical inference. T-test, simple analysis of variance, chi square, measures of correlation. Prereq: PSYC 1001 or equiv.; three years of high school mathematics or MATH 1100 or its equiv.

**PSYC 2050. Research Methods and Designs in Psychology. 4 cr. hrs.**

Scientific methods and their application in psychology with emphasis on the experimental method. May include experimental, quasi experimental, correlational and survey designs, as well as selection and implementation of descriptive and statistical analyses, individual laboratory projects, and preparation of scientific reports. Prereq: PSYC 1001 or equivalent and PSYC 2001.

**PSYC 2101. Introduction to Life-Span Developmental Psychology for Nursing Students. 3 cr. hrs.**

Principles, theories, and research in development. The entire life-span from conception to death will be studied with emphasis on theoretical approaches and empirically obtained data. The effects of genetic, social, and environmental factors on typical development patterns. Counts towards the major in Psychology only for students with double majors in Nursing and Psychology. Prereq: PSYC 1001 or equiv.

**PSYC 3101. Developmental Psychology: Conception Through Adolescence. 3 cr. hrs.**

Examines the developing human being from conception through adolescence. The concepts, methods, and theories relevant to the study of the developing child and adolescent will be considered. Investigates the major physical, cognitive, social and emotional changes during the phase of the life course, as well as the genetic and contextual influences on development. Prereq: PSYC 1001 or equiv.

**PSYC 3120. Developmental Psychology: Adulthood and Aging. 3 cr. hrs.**

Survey of theory and research in adulthood. Emphasis on adulthood, middle age, and old age. Typical developmental patterns will be analyzed, as will genetic, social, and environmental determinants. Prereq: PSYC 1001 or equiv.

**PSYC 3130. The Psychology of the Exceptional Child. 3 cr. hrs.**

Description and psychological implications of various forms of physical and mental deviations. Educational, vocational, therapeutic and social facilities for exceptional children. May be taken for credit in special education by minors in special education-speech therapy. Prereq: PSYC 3101 or equiv.; or cons. of instr.

**PSYC 3201. Introductory Social Psychology. 3 cr. hrs.**

The nature and concept of social psychology. Socialization of the child. Small group behavior including conformity, leadership, problem-solving. Attitudes and attitude change, prejudice, racism and sexism. Comparative studies in social behavior. Social psychology of the research situation. Prereq: PSYC 1001 or equiv.

**PSYC 3210. The Psychology of Prejudice. 3 cr. hrs.**

An overview of theory and research on the psychological underpinnings of intergroup intolerance, with emphasis given to racism, sexism, and heterosexism. Prereq: PSYC 1001.

**PSYC 3220. Human Sexuality. 3 cr. hrs.**

The scientific study of human sexuality from both a biological and behavioral perspective. Topics include: male and female sexual anatomy and sexual functioning, conception, pregnancy, childbirth, sexual variations, and sexually transmitted diseases. Prereq: PSYC 1001 or equiv., or cons. of instr.

**PSYC 3230. Business and Organizational Psychology. 3 cr. hrs.**

Psychology applied to basic problems of industry: personnel selection, motivation, training, job satisfaction, job safety, leadership, performance appraisal, job analysis, and pertinent legal issues. Prereq: PSYC 1001 or equiv.

**PSYC 3301. Learning and Behavior. 3 cr. hrs.**

A comprehensive survey of methods and findings of classical and operant conditioning. Some introduction to theories of learning. Prereq: PSYC 1001 or equiv.

**PSYC 3320. Cognition. 3 cr. hrs.**

A systematic survey of classical and contemporary research topics in human learning; information processing, concept formation, problem-solving, verbal and motor learning. Prereq: PSYC 1001 or equiv.

**PSYC 3401. Abnormal Psychology. 3 cr. hrs.**

The nature of normality-abnormality. Defense mechanisms and neurotic symptomatology. Functional psychoses and the personality pattern disturbances. Character disorders including sociopathy and passive-aggression, the addictions and sex deviations. Organic and psychosomatic disorders. Prereq: PSYC 1001 or equiv.

**PSYC 3410. Childhood Psychopathology. 3 cr. hrs.**

The major types of psychological disturbances in children viewed as deviations from normal development. Causative factors in the genesis of behavior problems, with emphasis on social learning. Behavior modification techniques used with children. Prereq: PSYC 1001 or equiv.

**PSYC 3420. Health Psychology. 3 cr. hrs.**

This course examines the psychological aspects of health and illness. Topics include health promotion, stress and coping, prevention, lifestyle and health, psychological adaptation to chronic illness and pain, rehabilitation, and health service delivery. Prereq: PSYC 1001.

**PSYC 3501. Theories of Personality. 3 cr. hrs.**

The formulation of personality theory, its purpose and problems. Psychoanalytic, behavioral, humanistic, and other theories of personality and their various applications to human behavior. Review of relevant research findings. Prereq: PSYC 1001 or equiv.

**PSYC 3550. Psychology of Gender Roles. 3 cr. hrs.**

Biological and cultural bases of gender roles; the psychology of women and men and the consequent relationships between the sexes; the pressures of gender stereotype and the bases of non-stereotypic childrearing; implications of anthropological investigations for an understanding of sex role ascriptions; relationship between gender role and responses to sexuality; remedial education for personhood. Prereq: PSYC 1001 or equiv.

**PSYC 3560. Psychology of Religion. 3 cr. hrs.**

Empirical research and findings pertinent to religion and religious experiences; psychological theories regarding religion; religious practices and experiences, religious orientation and awareness. Prereq: PSYC 1001.

**PSYC 3601. Biopsychology. 3 cr. hrs.**

Biological foundations of behavior with emphasis on the nervous system. Physiological mechanism in sensation, perception, motivation, emotion and learning. Functional neuroanatomy. Offered without a laboratory component. Prereq: PSYC 2050 or cons. of instr.

**PSYC 3610. Animal Behavior. 3 cr. hrs.**

Animal behavior, both in natural and experimental situations, emphasizing early experience, motivation, physiological mechanisms, adaptiveness and the evolution of behavior. Prereq: PSYC 1001 or equiv.

**PSYC 3701. Principles of Psychological Testing. 3 cr. hrs.**

The nature of psychological measurement. Principles of evaluation, construction and analysis of tests. Uses and classification of tests. Standards of ethical conduct in using tests. Individual and group tests of aptitude, achievement, interests, attitudes, values and personality adjustment. Prereq: PSYC 1001 or equiv. and PSYC 2001.

**PSYC 3830. The Psychology of Fantasy and Imagination. 3 cr. hrs.**

Review of theoretical, experimental, and clinical literature on fantasy and imagination; development of imaginal processes; types of imagery; cerebral asymmetries and the imaging process; physiology of imagination; imagery and learning; imagery and verbal communication; role of fantasy and imagination in creativity; imagination and make believe play; function of fantasy in sexual behavior; diagnostic and therapeutic uses of fantasy and imagination; role of imagination in hypnosis. Prereq: PSYC 1001 or equiv.

**PSYC 3840. Psychology of Happiness. 3 cr. hrs.**

Focuses on the emerging research and theory in positive psychology on the nature of happiness. The determinants and correlates of happiness will be examined, including the role played by love, humor, forgiveness, religion, compassion, and spirituality in creating happiness. Prereq: PSYC 1001 or equiv.

**PSYC 4330. Human Factors Engineering. 3 cr. hrs.**

Person-machine interactions, including sensory and motor phenomena and human limitations, controls and displays for computer-based and conventional machines, human information processing and artificial intelligence, workspace and environmental factors that influence optimal performance, relevant legal issues and human functioning in outer space. PSYC 1001 or equiv.; or engineering major.

**PSYC 4350. The Psychology of Death and Dying. 3 cr. hrs.**

Review of the psychological literature on death. Social and individual attitudes toward death. Reactions to the anticipation of the death of self and of significant others. Ways of responding to loss and death including grief, mourning, and bereavement. A survey of the various theories of death and suicide. Prereq: PSYC 1001 or equiv.

**PSYC 4701. Introduction to Clinical Psychology. 3 cr. hrs.**

Clinical psychology as a science and profession is discussed. Topics include the history, ethics, theories, roles and methods of clinical psychology. Also addressed are current issues concerning the practice of clinical psychology. Prereq: PSYC 3501 and PSYC 3401.

**PSYC 4720. Psychology of Marriage and Family. 3 cr. hrs.**

Psychological theory and research pertinent to understanding marital and family functioning. Topics vary, but include the development of intimate relationships, the transition to parenthood, divorce, and family violence. Prereq: Sr. stdng.

**PSYC 4801. History and Systems of Psychology. 3 cr. hrs.**

The development of psychological thinking from the 17th century to the present. The contributions of Descartes and Newton to Locke and the other British empiricists and, through them, to German mechanism and physiological psychology. The influence of Darwin, Freud, behaviorism and Gestalt psychology. The phenomenological and humanistic movement after World War II. Prereq: PSYC 2050 or Sr. stdng.

**PSYC 4931. Topics in Psychology. 3 cr. hrs.**

Contemporary theoretical and research trends in selected contemporary areas of psychology. Topics to be announced. Prereq: Cons. of instr.

**PSYC 4956. Advanced Undergraduate Research. 1-3 cr. hr.**

Readings, discussion and application of psychological research under the direction of a Psychology faculty adviser. Students are expected to review the literature on an assigned or negotiated topic and design and propose a specific research project that parallels or expands upon their semester experience. 1-3 semester credits. Course may be repeated for credit. A maximum of six credits of PSYC 4956, 4995, and 4999 combined may be counted as electives toward the minimum requirements for the major. Prereq: Cons. of instr.

**PSYC 4960. Advanced Undergraduate Seminar. 3 cr. hrs.**

Readings and discussion course designed to provide a high level overview of psychology with an emphasis on selected current topics. Each student will be expected to design and propose, but not necessarily conduct, a specific scholarly project. Prereq: Cons. of instr.

**PSYC 4964. Field Experience in Psychology. 3 cr. hrs.**

Placement in a specially selected applied setting in which the student has the opportunity to observe psychological knowledge, skills, and values demonstrated in one or more professional roles. Requires supervision in the setting and direction by the course instructor. Accompanied by seminar with readings, journals and reflections, presentations a term paper and demonstrated knowledge of appropriate ethical principles. Prereq: Sr. stndg., psychology major, and cons. of dept. ch.

**PSYC 4995. Independent Study in Psychology. 1-3 cr. hr.**

Independent study and research under the direction of a faculty member. Prereq: Cons. of dept. ch.

**PSYC 4999. Senior Thesis. 3 cr. hrs.**

Conduct empirical research involving an original research question under the direction of a psychology faculty adviser. Open to psychology majors. Prereq: 3.000 GPA, PSYC 2050, and cons. of dept. ch.; or Sr. stndg., 3.000 GPA, and cons. of dept. ch.; grade point average of at least 3.500 in Psychology. Maximum of six credits available for PSYC 4999 alone or PSYC 4995 and PSYC 4999 combined.

## Sociology

**SOCI 1001. Principles of Sociology. 3 cr. hrs.**

An introductory survey of the discipline including social structures, social institutions, social differentiation and stratification, social power, the processes of human interactions, and methods of sociological investigation.

**SOCI 2060. Social Statistics. 3 cr. hrs.**

Logic and application of statistical reasoning in social research. Topics may include: descriptive statistics, elements of probability theory, estimation, hypothesis testing, contingency tables, correlation, regression, sampling, questionnaire construction, and measurement. Introduction to the use of the computer in statistical analysis. Credit will not be granted if student receives credit for another elementary statistics course. Prereq: SOCI 1001 and MATH 105 or equiv.; or SOWJ 1001 and MATH 105 or equiv.; or CRLS 1001 and MATH 105 or equiv.; or consent of instructor and MATH 105 or equiv. Three years of high school preparatory mathematics can substitute for MATH 105.

**SOCI 2200. The Family. 3 cr. hrs.**

The structure and function of family types including analysis of marital and parent-child relationships. The relation of the family to other social institutions. Changing patterns of relationships and structure in the family.

**SOCI 2480. Sport and Society. 3 cr. hrs.**

The symbiotic relationship between sport and society. Topics that will be examined include the connections between sports and social mobility; sports and race; sports and gender; and sports and community identification. The course will show how sports are a pervasive feature of everyday urban life. SOCI 1001 recommended.

**SOCI 2500. Self, Language and Social Interaction. 3 cr. hrs.**

Perspectives on the individual self in society. The role language and social interaction in the construction of personal identity. The self as process and social object.

**SOCI 3000. Sociological Theory. 3 cr. hrs.**

Currents of thought about society, social structures and processes. Background and development of key concepts and theories in sociology. Techniques of theory construction and unification. May be taken concurrently or sequentially with SOCI 3050. Prereq: SOCI 1001 or cons. of instr.

**SOCI 3050. Methods of Social Research. 3 cr. hrs.**

Comparison and critique of the predominant methods of social research. Theoretical foundations, logic and language of science, ethical problems of collecting and reporting research data. Application of methods in research projects. Contribution of alternative methods to theory building, program evaluation, policy formulation, and direction of subsequent research. May not be taken for credit by students who have received credit for CRLS 3050. Prereq: CRLS 1001, or SOWJ 1001, or SOCI 1001 and SOCI 2060 or equiv. or cons. of instr.

**SOCI 3200. Social Problems in Urban Society. 3 cr. hrs.**

Analysis of selected social problems within the framework of modern American society from the viewpoint of their nature, extent, contributing factors, and programs of prevention and treatment. Concepts and theories related to the analysis of social problems and deviant behavior. SOCI 1001 recommended.

**SOCI 3250. Race and Ethnic Relations. 3 cr. hrs.**

Social, economic, political, and legal aspects of minority relations. Consideration of several minorities and minority issues such as racial, cultural, ethnic, age and gender. SOCI 1001 recommended.

**SOCI 3280. Race and Family. 3 cr. hrs.**

Focuses on the family structures and dynamics of major racial and ethnic groups in the United States and/or other societies. Topics considered may include major perspectives on race and family, historical and contemporary family patterns and practices, the diversity of family forms and relationships, social policies affecting race and family, cultural factors affecting race and family, and multiracial families. Recommended: SOCI 1001, SOCI 2200, or ANTH 2101.

**SOCI 3300. Sociology of the Life Course. 3 cr. hrs.**

The study of socialization, the influence of family, peers, schooling, mass media, and other institutions on human development from infancy through late life. Various sociological perspectives, developmental theories and critiques. Recommended: SOCI 1001.

**SOCI 3400. Behavior Patterns of Youth. 3 cr. hrs.**

The position of youth in modern society. Origin and implications of the generation gap, status ambiguity and its consequences, dependency and independence, the pursuit of identity, conformity and rebellion, the youth culture. SOCI 1001 recommended.

**SOCI 3500. Culture, Health and Illness. 3 cr. hrs.**

Social and cultural factors in the disease process, the distribution of disease, the meaning of health, the response to illness, and approaches to healing. Structure and operation of health-related professions and facilities. Current trends in medicine. Value conflicts. Recommended: SOCI 1001, ANTH 1001, or ANTH 2101.



**SOCI 3520. Health Care Systems. 3 cr. hrs.**

Comparison of social and cultural arrangements for handling health care. Variations in definitions of health. Systems of care at different levels of complexity-- interpersonal networks, organizations, communities, and nation states. Policy making and ethical aspects of health care decisions. Recommended: SOCI 1001.

**SOCI 3550. Race, Gender and Medicine. 3 cr. hrs.**

Historical overview of medical ideas regarding race and gender. Examination of medical and scientific models of mind, body, race, and gender, and their implications for health assessment, medical treatment, and health care policy. Consideration of social, cultural, and political dimensions of medicine in relation to race and gender. SOCI 1001, ANTH 1001, or ANTH 2101 recommended.

**SOCI 3570. Men, Masculinities and Health. 3 cr. hrs.**

Explores the social and psychological constructions of men's gender identities at various stages during the lifecourse and how those identity constructions are intertwined with health outcomes. SOCI 1001 recommended.

**SOCI 3600. Deviance and Social Control. 3 cr. hrs.**

Sociological analysis of deviance and society's response to it. Issues in defining and identifying deviance, the emergence of deviant behavior and identity, informal and formal reactions to deviance, and organizational and institutional efforts to remedy and control it. Topics may include crime, delinquency, and mental illness. SOCI 1001 recommended.

**SOCI 3931. Topics in Sociological Theory. 3 cr. hrs.**

Late 20th century intellectual issues, efforts and achievements which have contributed substantially to current sociological theory. May be taken twice, provided the topics differ. The specific topic of each offering will be designated in the Schedule of Classes. SOCI 1001 recommended.

**SOCI 3986. Internship and Seminar in Sociology. 3 cr. hrs.**

Field experience in a community social service agency for the purpose of furthering the student's integration of theory and practice in a professional setting. Placement is for a minimum of 140 hours per semester under the supervision of agency personnel and includes a weekly seminar with the internship coordinator. S/U grade assessment. Prereq: Sr. stndg., SOCI major, cons. of internship coordinator. Limited enrollment.

**SOCI 4050. Urban Ethnography: The City as Laboratory. 3 cr. hrs.**

Explores urban processes and institutions "from the inside." Initially focuses on the study of various ethnographies. Next, requires "hands-on" research, involving: observing human interaction, preparing field notes, conducting focused interviews, analyzing the collected data, and preparing a data-based research paper. SOCI 1001 recommended.

**SOCI 4100. Urban Life. 3 cr. hrs.**

Social psychological aspects of urban life and experience. Implications of urbanization for individuals and groups. Ecological, cultural, and institutional influences. Interpersonal and intergroup relations in urban settings. Topics may include conflict, alienation, diversity. SOCI 1001 recommended.

**SOCI 4130. Sociology of Human Values. 3 cr. hrs.**

Definitions of values in economics, linguistics, communication and sociology. The value system of selected sociologists. Values and sociocultural pluralism. SOCI 1001 recommended.

**SOCI 4200. Personal Troubles and Public Issues. 3 cr. hrs.**

Deals with the social realities of troubles, which range from circumstances that we treat as irksome to major traumas in our lives that become social problems. Focuses on the commonalities shared by these various social constructions. Draws from a variety of disciplines, notably sociology, social work, anthropology, history, psychology, linguistics and rhetorical studies. SOCI 1001 recommended.

**SOCI 4250. African-American Social Thought. 3 cr. hrs.**

Examination of historical and contemporary writings of Black social theorists. The impact of historical, social, economic, and cultural factors on Blacks in the United States and alternative strategies for change. SOCI 1001 recommended.

**SOCI 4270. Urban Sociology. 3 cr. hrs.**

Urban society with special consideration of the problems of dealing with the structures, institutions, agencies and decision-making units in a metropolitan area. SOCI 1001 recommended.

**SOCI 4300. Sociology of Aging. 3 cr. hrs.**

The place of the aged in contemporary society. Disengagement and the social integration of older persons. Roles linking older persons to society and roles in hospitals, nursing homes and homes for the aged. SOCI 1001 recommended.

**SOCI 4400. Social Inequality. 3 cr. hrs.**

Theories and systems of social class in modern society. Societal structures and processes resulting from stratification phenomena. SOCI 1001 recommended.

**SOCI 4420. Sociology of Religion. 3 cr. hrs.**

The sociological study of religious groups, institutions and behavior, including relationships between religion and other areas of social life. Recommended: SOCI 1001.

**SOCI 4440. Sociology of Education. 3 cr. hrs.**

Sociological analysis of educational institutions with primary emphasis on contemporary U.S. urban education, student subcultures, school-community relations and innovations. Recommended: SOCI 1001.

**SOCI 4450. Sociology of Sex and Gender. 3 cr. hrs.**

Biological and cultural bases of sex and gender patterns. Impact of major social institutions and processes on maintenance of gender patterns, with questions of power and dominance central to discussion. Benefits and costs of stereotypic gender patterns. Mechanisms and alternative directions for change. Historical and cross-cultural research included. SOCI 1001 recommended.

**SOCI 4460. Sociology of Work and Occupations. 3 cr. hrs.**

The diverse ways in which human beings make their livings in both industrialized and nonindustrialized societies. Career patterns and work problems. Theories about work and workers. Proposals for improving the quality of modern work. SOCI 1001 recommended.

**SOCI 4480. Complex Organizations. 3 cr. hrs.**

Theories and research on the sociology of organization. The social functions, structures and processes of formal and informal organizational systems in modern society and their relationships to social behavior. The nature and place of bureaucracies in complex societies. SOCI 1001 recommended.

**SOCI 4600. The Social Reality of Crime and Justice. 3 cr. hrs.**

A critical examination of the ways in which crime is defined, how crime control policies are established, and how the criminal justice system responds to the problem of crime. Specific attention will be given to the social and political context in which crime is talked about and responded to. Alternative approaches to crime control, such as peacemaking criminology and restorative justice, will be examined. Recommended: SOCI 1001.

**SOCI 4660. Law and Society. 3 cr. hrs.**

The social components of legal organizations and procedural systems. The role of law as an instrument of social control and social change. SOCI 1001 recommended.

**SOCI 4680. Sociology of Mental Illness. 3 cr. hrs.**

Review of major sociological and social psychological models of madness. Analysis of definitions and responses to mental illness. Study of the social processing involved in the production, recognition and treatment of mental illness. SOCI 1001 recommended.

**SOCI 4700. Political Sociology. 3 cr. hrs.**

The interrelationship of politics and society. Special consideration of leadership analysis, party systems, public opinion, electoral behavior and conflict situations. SOCI 1001 recommended.

**SOCI 4720. Sociology of Community. 3 cr. hrs.**

Discussion of contemporary problems of rural, urban and suburban communities including ecological and communication patterns, problems of identity, organization and motivation. SOCI 1001 recommended.

**SOCI 4740. Social Change. 3 cr. hrs.**

Selected topics dealing with models and theories of innovation, diffusion, resistance to change and associated conflict in and between social systems. Contents vary; subtitles indicate precise contents. SOCI 1001 recommended.

**SOCI 4931. Topics in Sociology. 3 cr. hrs.**

Lectures and discussions in an area which, because of its topicality, is not the subject of a regular course. Specific topics will be designated in the Schedule of Classes.

**SOCI 4986. Advanced Internship and Seminar in Sociology. 3 cr. hrs.**

Continuation of the internship experience (SOCI 3986). Placement is for a minimum of 140 hours per semester of supervised practice at the same agency as the previous semester and includes a weekly seminar with the internship coordinator. Credits earned cannot be counted toward the major. S/U grade assessment. Prereq: Sr. stndg., SOCI 3986 and cons. of internship coordinator. Limited enrollment.

**SOCI 4995. Independent Study in Sociology. 1-3 cr. hr.**

Supervised study in a specific area of Sociology. Prereq: Cons. of dept. ch. and twelve hours of Sociology courses with a GPA of 2.500.

**SOCI 4997. Capstone Seminar in Sociology. 3 cr. hrs.**

An in-depth consideration of sociological perspectives and concepts and how they may be used to analyze contemporary society and social relationships. Basic sociological theories, methods, and concepts are discussed and used to evaluate contemporary sociological concerns and issues. Supervised and individualized research-writing projects involving a sociological area of each student's choice. Prereq: SOCI major and 21 hours of sociology; or cons. of dept. ch.

**SOCI 4999. Senior Thesis. 1-3 cr. hr.**

Sociology majors with a GPA of 3.000 or higher may write a thesis under direction of an adviser. Prereq: Sr. stndg., SOCI 3000, SOCI 3050, and cons. of dept. ch.

## **Social Welfare and Justice**

**SOWJ 1001. Introduction to Social Welfare and Justice. 3 cr. hrs.**

Introduction to social work, social welfare and social justice; explores the ethics, values and goals of social welfare and justice. Examines historic, contemporary and global social issues and social change practices. Service Learning links the experiential to the theoretical.

**SOWJ 2150. Immigrants and their Communities. 3 cr. hrs.**

An in-depth examination of historic and contemporary immigration to the U.S., especially in relationship to the American economy, ideas about race and cultural pluralism. The effects of immigration law and social policies on the socio-economic mobility and well being of immigrant families are examined. The oral history method is used to capture immigrant experience.

**SOWJ 2200. Human Behavior in the Social Environment. 3 cr. hrs.**

Presents individual and social behavior within social, institutional and community contexts. Social science theory is applied to helping individuals, groups and families within the context of agency and community-based practice. Special attention is paid to cultural diversity, social justice issues and populations at risk across the life course.

**SOWJ 2600. Community Organizing. 3 cr. hrs.**

Teaches basic leadership and organizing skills. Designed to be interactive and experiential, with role-plays, case studies and self-evaluations. Service Learning is required and implemented through Common Ground, an alliance of organizations seeking to make social change in Greater Milwaukee.

**SOWJ 3001. Social Welfare Policy and Programs. 3 cr. hrs.**

Examination of social welfare policies, the policy making process and appropriate professional roles for human service workers. Discussion how social values and societal priorities affect the formulation, implementation and evaluation of social welfare policies and services through public, private and voluntary sectors.

**SOWJ 3300. Practice Skills with Individuals, Families and Groups. 3 cr. hrs.**

Introduction to practice skills with individuals, families, groups and communities. Students develop skills in supportive listening, interviewing and establishing and maintaining professional relationships. Specific strategies for working with groups and families are developed. Classroom labs are linked to service learning. Prereq: SOWJ 1001.

**SOWJ 3320. Victim Services and Policies. 3 cr. hrs.**

Explores the history of victim services, the effects of victimization on individuals, families, and communities, the development of policies and the services available to victims within and external to the criminal justice system. Specialized topics may include family violence, workplace violence, public tragedy, violent crime, and white collar crime.

**SOWJ 3370. Family Counseling and Therapy. 3 cr. hrs.**

Introduction to family counseling and therapy primarily examining communication and structural models. Various theories of family intervention. Exploration of the process of therapy from initial problem assessment through intervention planning, implementation, evaluation, and termination. Simulations, role play and other classroom exercises help students understand how theories and techniques of counseling are applied in practice.

**SOWJ 3400. Advocacy and Social Change Theory and Practice. 3 cr. hrs.**

Review various theoretical and historical perspectives on injustice and oppression, within the context of social change strategies. Examination of traditional and nontraditional social action strategies, including community organizing/development. Learn agency and legislative advocacy skills with a specific focus on victim advocacy and at-risk populations. Analyze values and ethical perspectives related to social change.

**SOWJ 3450. Arab and Muslim Americans. 3 cr. hrs.**

Explores the historical, political and socio-economic contexts that have shaped Arab American communities and identities. Examines the parallel growth of Muslim American communities brought about by immigration and religious conversion. Analyzes specific issues faced by Arabs and Muslims in American society, especially after 9/11.

**SOWJ 3700. Social Welfare and the Law. 3 cr. hrs.**

Provides an overview of issues lying at the intersection of the social work and the legal professions. Principles of collaboration between these professions and selected concepts and principles related to the establishment and enforcement of legal and social provisions for the protection of children, adults and the family are emphasized. Presents theoretical knowledge and background material, with opportunities to critically analyze social welfare and legal issues.

**SOWJ 3986. Internship in Social Welfare and Justice. 3 cr. hrs.**

Field experience in a community social service agency for the purpose of furthering the student's integration of theory and practice in a professional setting. Placement is for a minimum of 140 hours per semester under the supervision of agency personnel, and includes a weekly seminar with the internship coordinator. S/U grade assessment. Limited enrollment. Prereq: Sr. stdng., SOWJ major, and cons. of internship coordinator.

**SOWJ 4300. Advanced Practice. 3 cr. hrs.**

Students strengthen their skills in interviewing, data collection, problem appraisal, and the development of contracts for planned change. Competence is developed in carrying out contract plans, evaluating results, renegotiating contracts and terminating contracts. Working with families and groups is further examined. Prereq: SOWJ 1001.

**SOWJ 4500. Challenges in Social Welfare and Justice. 3 cr. hrs.**

An in-depth examination of ethical issues and special challenges that characterize the fields of social work, social welfare and social justice. Explores value dilemmas, stresses and frustrations that may confront professionals in these fields.

**SOWJ 4600. Faith-based Activism. 3 cr. hrs.**

Analyzes sociologically a range of historic and contemporary faith-based movements through the lens of social movement theory. Examines variations in goals, framing, strategies, mobilization, engagement of symbols and movement cultures as they are recorded in movement literature, oral histories, archives, films and scholarly studies.

**SOWJ 4931. Topics in Social Welfare and Justice. 3 cr. hrs.**

A lecture course on special areas and themes. Specific topics will be designated in the Schedule of Classes.

**SOWJ 4986. Advanced Internship in Social Welfare and Justice. 3 cr. hrs.**

Continuation of the internship experience (SOWJ 3986). Placement is for a minimum of 140 hours per semester of supervised practice at the same agency as the previous semester and includes a weekly seminar. S/U grade assessment. Limited enrollment. Prereq: SOWJ 3986 and cons. of internship coordinator.

**SOWJ 4995. Independent Study in Social Welfare and Justice. 1-3 cr. hr.**

Supervised study in a specific area of SOWJ, such as in-depth library of field research, or a focused community project. Prereq: Cons. of dept. ch., minimum of 9 hours with a GPA of 2.500 in SOWJ courses.

**SOWJ 4999. Senior Thesis. 1-3 cr. hr.**

SOWJ majors with a quality point average of 3.000 or higher may write a thesis under the direction of an adviser. Prereq: Sr. stdng., 3.000 GPA, and cons. of dept. ch.

## Spanish

**SPAN 1001. Elementary Spanish 1. 4 cr. hrs.**

Introduction to the Spanish language. Fundamentals of comprehension, speaking, reading and writing. No previous study of Spanish; or by departmental placement. Students who have studied two or more years of Spanish in high school and are placed in SPAN 1001 must register for SPAN 1003. Not open to students with native or near native fluency.

**SPAN 1002. Elementary Spanish 2. 4 cr. hrs.**

Continuation of SPAN 1001 with emphasis on fundamentals of comprehension, speaking, reading and writing. Prereq: SPAN 1001; not open to students with native or near native fluency.

**SPAN 1003. Intensive Elementary Spanish. 4 cr. hrs. SPAN 3002. Spoken Spanish. 3 cr. hrs.**

A single-semester first-year intensive Spanish course designed for students who have had two or more years of high-school Spanish and who do not place in an intermediate second-year college level course. Emphasis is placed on acquisition of key features of Spanish vocabulary and structure, through participation in communicative activities and interaction with a variety of authentic texts. The course consists of four class hours and one hour of associated lab. Two or more years of high school Spanish and departmental placement. Not open to students with native or near native fluency.

**SPAN 2001. Intermediate Spanish 1. 3 cr. hrs.**

Grammar review, oral and written practice, and more intensive reading. Prereq: SPAN 1002; or SPAN 1003; or by departmental placement. Not open to students with native or near native fluency.

**SPAN 2002. Intermediate Spanish 2. 3 cr. hrs.**

Continuation of SPAN 2001. Prereq: SPAN 2001; not open to students with native or near native fluency.

**SPAN 2003. Intensive Intermediate Spanish. 4 cr. hrs.**

Concentrated grammar review with conversation and extensive reading. Aimed to give qualified students the opportunity to complete the intermediate level and a faster and more demanding pace. Prereq: SPAN 1002 or SPAN 1003 with minimum grade of AB; or by departmental placement. Not open to students with native or near native fluency.

**SPAN 3001. Grammar Review and Writing. 3 cr. hrs.**

Development of writing proficiency in Spanish through a variety of texts. Review and refinement of language structures and linguistic functions for more effective writing. Prereq: SPAN 2002 or 2003; or by departmental placement. Not open to students with native or near native fluency.

Development of oral proficiency in Spanish within a wide range of contexts. Focus on activities and strategies to improve accuracy and fluency. May be taken concurrently with SPAN 3001. Prereq: SPAN 3001; or cons. of dept. ch. Not open to students with native or near native fluency.

**SPAN 3005. Spanish Grammar Review and Writing for Heritage Speakers. 3 cr. hrs.**

Acquaints heritage speakers with grammatical structures of the Spanish language for further development of their oral and written communication skills. Special emphasis placed on reading and lexical development, grammar review, orthographic practice and composition. Prereq. By departmental placement or cons. of dept. ch.

**SPAN 3100. Advanced Spanish Composition and Conversation. 3 cr. hrs.**

Practice and review of advanced grammatical structures of the Spanish language for further development of oral and written communication skills. Prereq: SPAN 3001 and SPAN 3002, or SPAN 3005; or cons. of dept. ch. Not open to students with native or near native fluency.

**SPAN 3210. Hispanic Cultures and Literatures in English. 3 cr. hrs.**

Readings in English covering the major cultural, social and literary developments in Hispanic literature with emphasis on outstanding literary works and figures. Taught in English, knowledge of Spanish not required. May be counted as part of the Arts and Sciences literature requirement but not as part of the foreign language requirement.

**SPAN 3300. Peoples and Cultures of Spain. 3 cr. hrs.**

Historical development of the cultures of Spain from early times to the present. The course will explore various topics pertaining to Spanish society, literatures, politics, art, music and film. Prereq: SPAN 3001 or SPAN 3005; or cons. of dept. ch.

**SPAN 3310. Peoples and Cultures of Spanish America. 3 cr. hrs.**

A multidisciplinary and historical study of the development of the cultures and civilizations of Spanish-speaking America from pre-Columbian days to the present. Emphasis on the gradual evolution of the different artistic forms present in such areas as architecture, music, painting, literature, history, politics, education, art, and film. Prereq: SPAN 3001 or SPAN 3005; or cons. of dept. ch.

**SPAN 3500. Introduction to Literary Analysis in Spanish. 3 cr. hrs.**

Basic literary concepts and analysis of the four genres, with intensive practice in reading and oral comprehension. Prereq: SPAN 3001; or cons. of dept. ch. Not open to students with native or near native fluency.

**SPAN 3505. Introduction to Literary Analysis in Spanish for Heritage and Native Speakers. 3 cr. hrs.**

Acquaints heritage speakers of Spanish with basic literary concepts and analysis of the four genres, the principal literary movements, and representative authors in the Hispanic world. Prereq: SPAN 3005; or cons. of dept. ch.

**SPAN 3515. Masterpieces of Early Spanish Literature. 3 cr. hrs.**

Spanish literature from its origin to the end of the 17th century. Readings include Berceo, Juan Ruiz, Garcilaso de la Vega, Fernando de Rojas, San Juan de la Cruz, Lope de Vega, Cervantes, and Quevedo. Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch. Not open to students with native or near native fluency.

**SPAN 3520. Masterpieces of Modern Spanish Literature. 3 cr. hrs.**

Continuation of SPAN 3515. Representative Spanish literary works from the 18th century to the present. Readings include Moratín, Larra, Bécquer, Zorrilla, Unamuno, García Lorca and Rivas. Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch. Not open to students with native or near native fluency.

**SPAN 3700. Introduction to Business Spanish. 3 cr. hrs.**

A practical overview of Spanish commercial terminology, vocabulary and correspondence used in modern and contextualized business settings in the Hispanic world. Prereq: SPAN 3001 or SPAN 3005; or cons. of dept. ch. Not open to students with native or near native fluency.

**SPAN 3705. Advanced Spanish for Business. 3 cr. hrs.**

An advanced course designed to train students to deal successfully with a linguistic, geographic and commercial context with business components and practices closely related to the Hispanic business world of today. Prereq: SPAN 3700 for non-native speakers of Spanish or SPAN 3005; or cons. of dept. ch.

**SPAN 3710. Introduction to Spanish for the Health Professions. 3 cr. hrs.**

This course is designed to introduce the student to Spanish used in the health professions. Medical terminology, language skills, and cultural awareness and sensitivity are among the areas that will be developed in the course. Prereq: SPAN 3001 or SPAN 3005; or cons. of dept. ch. Not open to students with native fluency in Spanish.

**SPAN 3715. Advanced Spanish for the Health Professions. 3 cr. hrs.**

An advanced course in medical Spanish to train students who plan to work in a health-related area to communicate effectively in their field. Service Learning is required in this course. Prereq: SPAN 3710 for non-native speakers of Spanish or SPAN 3005; or cons. of dept. ch.

**SPAN 4110. Advanced Spanish Grammar and Syntax. 3 cr. hrs.**

Theoretical and practical study of selected major syntactic structures of Spanish. Emphasis on the development of advanced-level language functions, dialect variation, contrastive analysis, and pedagogical implications. Prereq: SPAN 3001 and SPAN 3002, or SPAN 3005; or cons. of dept. ch.

**SPAN 4120. Spanish Phonetics and Applied Linguistics. 3 cr. hrs.**

Study of Spanish phonetics, phonological and orthographic systems, morphological and syntactic structures, and pragmatics. Emphasis on articulation, conditioned and dialectal variation, acquisition of Spanish by English-speaking learners, and pedagogical implications. Prereq: SPAN 3001 and SPAN 3002, or SPAN 3005; or cons. of dept. ch.

**SPAN 4140. Spanish Second Language Acquisition. 3 cr. hrs.**

Introduction to theories and approaches in second language acquisition. Examination of issues such as the similarities and differences between first and second language acquisition, theories of second language acquisition, factors that influence the language learning process, cognitive and sociocultural perspectives, the effect of study abroad on the development of second language acquisition, the testing of Spanish and the role of instruction in Spanish second language learning. Prereq: SPAN 3001 and SPAN 3002, or SPAN 3005; or cons. of dept. ch.

**SPAN 4150. Spanish as a World Language. 3 cr. hrs.**

Study of the status of Spanish in the world with reference to areas such as standardization, language history and variation, linguistic unification and fragmentation, discourse analysis, pragmatics and contact with other world languages. Prereq: SPAN 3001 and SPAN 3002, or SPAN 3005; or cons. of dept. ch.

**SPAN 4310. Spanish Film and Society. 3 cr. hrs.**

A comprehensive study of Spanish film. Special attention to the representation of key elements of the Spanish identity, such as family relations, culture, sex, gender, class, politics, and power. Course materials include films and readings in film theory. Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch.

**SPAN 4315. Spanish-American and Latino Film/Society. 3 cr. hrs.**

Study of Spanish-American and Latino film in accordance with contemporary cultural and film theory. Special attention to the representation of key elements of the Hispanic identity through culture, class, gender, sexuality, religion, politics and/or power. Viewings may include documentaries, feature length films, short films or films based on literature in and outside of class. Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch.

**SPAN 4320. Contemporary Issues in the Hispanic World. 3 cr. hrs.**

Focuses on the study and discussion of current topics, preoccupations, trends and issues pertaining to various Hispanic societies of today in areas such as religion, educational reforms, ethnicity, race, identity, social stratification, and economic development. Prereq: SPAN 3300 or SPAN 3310; or cons. of dept. ch.

**SPAN 4350. Nobel Prize Winners of the Hispanic World. 3 cr. hrs.**

Study of the literary achievements and representative works of such Hispanic Nobel Prize recipients as Aleixandre, Asturias, Benavente, Cela, Echegaray, García Márquez, Jiménez, Mistral, Neruda and Paz. Prereq: SPAN 3505, SPAN 3515, or SPAN 3520; or cons. of dept. ch.

**SPAN 4400. U.S. Latino/a Literature. 3 cr. hrs.**

A comprehensive study of U.S. Latinos/as' struggle for identity based on the ethnic, economic, historical, and cultural position of the Spanish-speaking population in the United States. Reading generally includes Anaya, Castillo, Chévez, Cisneros, Díaz, and Rodríguez, among others. Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch.



**SPAN 4450. Afro-Hispanic Caribbean Literature and Culture. 3 cr. hrs.**

Exploration of the relationship between literature and culture in the Afro-Hispanic Caribbean by focusing on themes of slavery, race, class, identity, religion, immigration and politics through the works of such writers as Manzano, Gómez de Avellaneda, Villaverde, Barnet, Rodríguez Juliá, Palézs Matos, Guillén and Morejón. Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch.

**SPAN 4500. Race, Culture and Religion in Early Spanish Literature. 3 cr. hrs.**

A study of representative literary texts from the Spanish Middle Ages to the 16th century with emphasis on both literary and cultural issues. Works studied generally include Poema del Mío Cid, Libro de Buen Amor, La Celestina and lyrical poetry. Prereq: SPAN 3505 or SPAN 3515; or cons. of dept. ch.

**SPAN 4505. The Spanish Renaissance. 3 cr. hrs.**

Readings and analysis in literary historical context of selected, significant works from representative authors such as Lope de Vega, Calderón de la Barca, Tirso de Molina, Fray Luis de León, San Juan de la Cruz, Santa Teresa de Jesús, and Góngora. Prereq: SPAN 3505 or SPAN 3515; or cons. of dept. ch.

**SPAN 4510. Cervantes' Don Quijote. 3 cr. hrs.**

In-depth study and analysis of Cervantes' masterpiece Don Quijote within the historical, political, and cultural context of the Spanish Golden Age. Special attention to his life, his novelistic theories, his literary works and importance in the creation of the modern novel. Prereq: SPAN 3505 or SPAN 3515; or cons. of dept. ch.

**SPAN 4525. Spanish Literature: Eighteenth and Nineteenth Centuries. 3 cr. hrs.**

The major figures of the Enlightenment, Neoclassic, Romantic, Realist and Naturalist movements in Spain. Readings include Cadalso, Larra, Pardo Bazán, Clarín, and Galdós. Prereq: SPAN 3505 or SPAN 3520; or cons. of dept. ch.

**SPAN 4550. Twentieth and Twenty-First Century Spanish Literature. 3 cr. hrs.**

Non-dramatic literature after 1898 with emphasis on the social significance of literary production in contemporary Spain. Readings include Unamuno, Laforet, Matute, Delibes, Goytisolo, and Vázquez Montalbán. Prereq: SPAN 3505 or SPAN 3516; or cons. of dept. ch.

**SPAN 4560. Contemporary Spanish Theater. 3 cr. hrs.**

A study of the major formal and thematic developments in contemporary peninsular Spanish theater with emphasis on the works of such dramatists as Valle Inclán, Mihura, Casona, Sastre, Buero Vallejo, García Lorca, Nieva, and Pedrero. Prereq: SPAN 3505 or SPAN 3520; or cons. of dept. ch.

**SPAN 4600. Spanish-American Literature: Pre-Columbian to Baroque. 3 cr. hrs.**

This course presents a panoramic overview of the major writers and relevant literary manifestations present in the Hispanic World from the pre-Columbian days (e.g. Aztecs, Mayans and Incas), the Baroque. Writers studied generally include: Colón, Cortés, Las Casas, Inca Garcilaso de la Vega, Sor Juana, among others. Prereq: SPAN 3505 or SPAN 3515; or cons. of dept. ch.

**SPAN 4610. Spanish-American Literature: Eighteenth and Nineteenth Centuries. 3 cr. hrs.**

Overview of the development of literature in Spanish America during the 18th and 19th centuries. Major movements studied include Romanticism, Realism, and Naturalism. Topics of particular interest include the promotion of independence, the search for national identity, and efforts to reform colonial practices such as slavery. Writers studied generally include: Fernandez de Lizardi, Bello, Bolívar, Echeverría, Isaacs, Gómez de Avellaneda, Sarmiento, and Martí, among others. Prereq: SPAN 3505, SPAN 3515, or SPAN 3520; or cons. of dept. ch.

**SPAN 4615. Spanish-American Literature: Modernismo and Vanguardismo. 3 cr. hrs.**

Study of Modernismo and the avant-garde movements in Spanish America. Writers studied include: Darío, Rodó, Huidoboro, Storni, Vallejo and Borges among others. Prereq: SPAN 3505 or SPAN 3520; or cons. of dept. ch.

**SPAN 4620. Spanish-American Literature: The Boom to the Twenty-First Century. 3 cr. hrs.**

Study of various literary modes of thought and tendencies present in the Spanish America throughout the 20th century to the present in areas such as poetry, the short story, the short novel and the essay. Emphasis on the Boom and post-Boom tendencies. Writers studied generally include: Paz, Borges, Fuentes García Márquez, Allende, Poniatowska and Menchú, among others. Prereq: SPAN 3505 or SPAN 3520; or cons. of dept. ch.

**SPAN 4640. Novels and Novelists in Spanish-America. 3 cr. hrs.**

This course focuses on the different trends, forms, and contents of the Spanish American novel as a genre, with emphasis on the works of such modern and cosmopolitan writers as Sabato, Fuentes, Carpentier, Ferré, Allende, Esquivel, Vargas Llosa and García Márquez. Prereq: SPAN 4600, SPAN 4610, SPAN 4615, or SPAN 4620; or cons. of dept. ch.

**SPAN 4660. Spanish-American Theatre. 3 cr. hrs.**

Study of Spanish-American theatre from Colonial times to present. Writers studied include Sor Juana, Díaz, Gambaro, Marqués, Sánchez, Usigli and Wolf, among others. Prereq: SPAN 3505, SPAN 3515 or SPAN 3520; or cons. of dept. ch.

**SPAN 4670. Spanish-American Short Story. 3 cr. hrs.**

Study of the evolution of the Spanish-American short story. Writers studies include Borges, Cortázar, Donoso, Ferré, Fuentes, García, Marqués, Quiroga, Rulfo and Valenzuela, among others. Prereq: SPAN 4600, SPAN 4610, SPAN 4615 or SPAN 4620; or cons. of dept. ch.

**SPAN 4931. Topics in Spanish Language, Culture and Literature. 1-3 cr. hr.**

Topics vary. Subject to be announced. Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch.

**SPAN 4960. Senior Seminar in Spanish. 3 cr. hrs.**

Advanced study of a cultural, linguistic or literary theme in Spanish. Seminar will fulfill the College of Arts and Sciences Senior Experience Curriculum requirement. Specific topic of the seminar to be announced in the Schedule of Classes. Prereq: Major or minor in Spanish and Sr. stdng.; or cons. of dept. ch.

**SPAN 4995. Independent Study in Spanish. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

**SPAN 4999. Senior Thesis in Spanish. 2 cr. hrs.**

Introductory thesis guidance for approved students under the direction of a departmental adviser. Prereq: Cons. of dept. ch.

## Theology

**THEO 1001. Introduction to Theology. 3 cr. hrs.**

Key sources and questions of theology as reflection upon the worldview and core narrative found in Christian tradition and scriptures. Includes orientation to the academic study of religion. Background in theology is not presupposed. Prerequisite to all other courses in theology.

**THEO 2000. Hebrew Scriptures: Old Testament Overview. 3 cr. hrs.**

Survey of the contents of the Hebrew Bible, its historical contexts and religious ideas. Includes analysis of selected texts from representative sections of the Old Testament and discussion of their various theological visions of God, the human person and the people of God in interrelationship. Prereq: Soph. stdng. and THEO 1001.

**THEO 2010. Hebrew Scriptures/Old Testament Selected Books:. 3 cr. hrs.**

Study of a portion of the Old Testament in depth and with a focus on critical reading skills, as well as central theological questions (God, individual, community). Specific textual content varies by term, with possible focus on the Pentateuch, Prophets, and the other Writings. Prereq: Soph. stndg. and THEO 1001.

**THEO 2100. New Testament Overview. 3 cr. hrs.**

Survey of the contents of the New Testament, its historical contexts and religious ideas. Includes analysis of selected texts from representative sections of the New Testament and discussion of their various theological visions of God, the human person and the people of God in interrelationship. Prereq: Soph. stndg. and THEO 1001.

**THEO 2110. New Testament Selected Books:. 3 cr. hrs.**

Study of a portion of the New Testament in depth and with a focus on critical reading skills, as well as central theological questions (God, individual, church). Specific textual content varies by term, with possible focus on the synoptic gospels, the Johannine literature, or the Pauline letters. Prereq: Soph. stndg. and THEO 1001.

**THEO 2200. The Bible Through the Ages. 3 cr. hrs.**

Understandings and uses of the Bible in the history of Christianity. Revelation, Faith, Tradition, Scripture. Prereq: Soph. stndg. and THEO 1001.

**THEO 2210. Theology Through the Centuries. 3 cr. hrs.**

Trinity, Incarnation and Salvation in the history of Christian thought over a substantial portion of its range. Prereq: Soph. stndg. and THEO 1001.

**THEO 2220. Good and Evil: Past and Present. 3 cr. hrs.**

Human beings' religious and moral relationship with God and fellow creatures as illuminated by past Christian experience, in comparison with the present. Major emphasis on one or two historical eras (Early Church, Middle Ages, Byzantine, Reformation, Recent). Prereq: Soph. stndg. and THEO 1001.

**THEO 2300. Quests for God, Paths of Revelation. 3 cr. hrs.**

The quest for God in human and specifically religious experiences with a focus on Christian belief in God. Grounds for belief; revelation; the nature of God's relationship to the world including issues relevant to modern culture and science. The historical precedents and context for these issues. The dialogue with other religious and atheistic conceptions of ultimate reality. Implications of a community's understanding of God for its way of life. Prereq: Soph. stndg. and THEO 1001.

**THEO 2310. Explorations in Christian Theology. 3 cr. hrs.**

Examination of the meaning and interconnections of some of the central themes in Christian theology (e.g. Jesus Christ, Trinity, Church, Sacraments, Sin and Grace, Revelation). The historical and communal context for understanding these. Implications of these for understanding what it means to be human. Prereq: Soph. stndg. and THEO 1001.

**THEO 2320. The Event and Meaning of Vatican II. 3 cr. hrs.**

The reasons for which this ecumenical council was called. The historical context in which it was celebrated from 1962 until 1965. The meaning of this council's documents for Christian conceptions of God, the human community, the Church, the world, and the interaction of all of these. Prereq: Soph. stndg. and THEO 1001.

**THEO 2400. Christian Discipleship. 3 cr. hrs.**

The Christian identity of God as a God of Love and Justice. The divine and personal call to the human person to a life of holiness, faith, the virtues, especially justice; the preferential option for the poor; the role of community in the moral and spiritual life of individuals and Christian communities as agents for social change. Prereq: Soph. stndg. and THEO 1001.

**THEO 2410. Christian Faith in Cultural Contexts. 3 cr. hrs.**

Religious experience and beliefs concerning God, human beings, and faith community as apprehended within a particular historically and culturally situated community or communities (e.g. African-American, Hispanic, Asian, or European). Prereq: Soph. stndg. and THEO 1001.

**THEO 2420. Bridging the Racial Divide. 3 cr. hrs.**

Examination of racism, ethnic tension, and theology from the perspective of "white privilege" and African American experience in American Christianity. Reflects on the intersection of these areas to discover, on the other hand, to discern how specific theological notions contribute positively or negatively to our understanding of race, ethnic tension and social justice. Prereq: THEO 1001.

**THEO 4000. Digging the Bible: Archeology and Biblical Studies. 3 cr. hrs.**

An exploration of the uses and abuses of archeology relative to the field of biblical studies. Case studies in a historical approach to the intersection of archeology and biblical theology. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4020. The Bible in the Jewish Community. 3 cr. hrs.**

The uses of the Bible in Jewish life and practice, in synagogue and in private use. Haggadah and Halakah. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4030. Women in the Bible. 3 cr. hrs.**

Status and roles of women in selected biblical texts. Social and historical background with emphasis on narrative technique and theological themes. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4130. Religion and American Life. 3 cr. hrs.**

Survey the historical impact of religious belief and institutions on the intellectual, cultural, and public life of the United States. Prereq: Jr. stndg., THEO 1001 and one second-level theology course.

**THEO 4190. Studies in Biblical Theology. 3 cr. hrs.**

Significant topics in Old Testament, Intertestamental, or New Testament literature. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4200. Theology in the Early Church. 3 cr. hrs.**

Basic theological questions and developments during the era of the Church Fathers. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4210. History and Theology of the Christian East. 3 cr. hrs.**

The Christian East from its origins, through the conversion of Constantine, to the present-day Eastern Orthodox and Oriental Orthodox Churches. Particular attention to the distinctive theological emphases of the East, as well as to the developments leading to the break in communion between Catholic (and Protestant) West and Orthodox East. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4220. St. Augustine: The Man and the Theologian. 3 cr. hrs.**

A study of Augustine's life, writings and thought, with special attention to the Confessions, to his theology of the church and the sacraments, and to his teaching on grace and predestination, against the background of his early philosophical writings. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4230. Theology in the Middle Ages. 3 cr. hrs.**

Basic theological questions and developments during the Middle Ages, from the Carolingians to the fourteenth century. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4240. Theology in the Reformation Era. 3 cr. hrs.**

Basic theological questions and developments during the late Middle Ages and early Reformation. Current ecumenical issues also addressed. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4250. Martin Luther. 3 cr. hrs.**

The thought and world of Luther, with emphasis on Luther in his Catholic context; Luther and the Bible, Augustine, the Radicals, the Pope; Luther's theology of faith and freedom; contextual, theological and ethical. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4260. Theology in America. 3 cr. hrs.**

Basic theological questions and developments from Puritanism to the present. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4270. American Catholic Life and Thought. 3 cr. hrs.**

Analyzes the development of American Catholic life and thought from the colonial establishment to the present. Investigates in particular how clergymen, theologians, and laypersons came to terms with the difficulties and benefits of being Catholic in the United States. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4290. Studies in Historical Theology. 3 cr. hrs.**

Significant figures and themes in the history of religious thought, examined in their historical context and contemporary significance. Topics and periods vary. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4300. Contemporary Atheism and Theism. 3 cr. hrs.**

Origins and varieties of contemporary atheism. The existence of God and Christian theistic interpretations. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4310. Theology of the Holy Spirit. 3 cr. hrs.**

Study of the distinct mission and person of the Holy Spirit in the Trinitarian work of human salvation. Analysis of biblical, patristic, and conciliar sources; attention to modern theology and the role of experience. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4320. Jesus the Christ. 3 cr. hrs.**

The identity of Jesus Christ and the nature of Christian salvation as attested to in the New Testament and Christian tradition. Historical Jesus and diversity of christologies in the New Testament. Humanity and divinity of Christ. The saving significance of Christ's life, death, and resurrection. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4330. Theology of the Church. 3 cr. hrs.**

The Church in light of the documents, events, and charism of Vatican II. Contemporary understandings of the Church and its mission in the modern world. Special attention to post-conciliar "communion ecclesiology" and the relation of the local to the universal Church. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4340. Sacraments and Christian Life. 3 cr. hrs.**

Theological overview of the major sacramental enactments of the church's life in Christ. The witness of Scripture and Tradition, including the liturgy itself. Ethical and ecumenical dimensions. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4350. The Eucharist. 3 cr. hrs.**

Biblical origins and historical evolution of the Eucharist in light of contemporary theology and ritual theory, with special focus on the Roman Rite Catholic post-Vatican II celebration. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4360. Christian Prayer and Mysticism. 3 cr. hrs.**

Introduction to some of the main currents in the Christian tradition of prayer and mysticism. Origins in Scripture and the early church. Main lines of development in both Eastern and Western traditions, with a focus on the Catholic tradition. Prereq: Jr. stndg., THEO 1001, and one second-level theology course.

**THEO 4370. Protestant Thought and Practice. 3 cr. hrs.**

Major perspectives within the broad spectrum of Protestantism. Examination of the thought of several Protestant theologians. A survey of the unity and diversity of several Protestant denominations and their respective forms of worship. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4390. Studies in Systematic Theology. 3 cr. hrs.**

Significant movements and/or major figures in contemporary systematic theology. Their historical antecedents and cultural context. Specific topics to be specified in the Schedule of Classes. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4400. Christian Faith and Justice. 3 cr. hrs.**

Classic and recent Christian understandings of justice as interpersonal and societal right-relations. Justice as constitutive aspect of the Gospel; love and justice; Christian responsibility in the face of injustice. Further issues, e.g. sexual and gender ethics, political and economic issues. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4405. Christian Theology in Global Contexts. 3 cr. hrs.**

The reception of the Christian gospel in diverse cultures throughout the world. The challenge of inculturation and the requirements of the unity of Christian faith. The meaning of mission and evangelization outside the West. The encounter with indigenous religions. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4410. Family, Church, and Society. 3 cr. hrs.**

The interaction of family, church, and society. Contemporary family patterns, their strengths and stresses; the teachings, reflection, and pastoral responses of the Church concerning marriage and family. Ecclesial and societal implications of family as "domestic church." Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4420. Theology, Violence, and Nonviolence. 3 cr. hrs.**

Non-violence as a creative solution to human oppression and violence. The relationship between non-violence and the life style of such figures as Jesus, Gandhi, King. The implications of non-violence for social, political and cultural life. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4430. Theology and the Natural Sciences. 3 cr. hrs.**

Theological analysis of the historical relationship between religion and the natural sciences; exploration of models for relating the two disciplines today; reflection on the theological implications of contemporary scientific discoveries and theories. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4440. Foundations of Ecological Ethics. 3 cr. hrs.**

Exploration of religious foundations for ecological ethics, with a focus on the Catholic tradition and social teachings; application to contemporary ecological problems. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4450. Medical Ethics. 3 cr. hrs.**

Health care practices under moral assessment from within the Christian tradition. Controversial topics facing medicine (issues of the beginning and end of life, assisted reproduction, etc.) as related to Christian moral principles. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4490. Studies in Moral Theology. 3 cr. hrs.**

Selected issues in contemporary moral life; selected themes from classical and contemporary writings in moral theology and Christian ethics. Topics vary, as specified in the Schedule of Classes. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4500. Christ and World Religions: Theology of Interreligious Dialogue. 3 cr. hrs.**

Global pluralism of religions considered from perspectives of Christian faith. Methods and case studies of theological dialogue with particular religious traditions, e.g. Judaism, Islam, Hinduism, Buddhism. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4510. Survey of World Religions. 3 cr. hrs.**

An overview of the major religious traditions of the world: Hinduism, Buddhism, religions of China and Japan, Judaism, Christianity, and Islam. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4520. Jewish Thought and Practice. 3 cr. hrs.**

Meaning of Jewish history. Philosophical and social understanding of the Jewish experience. Ruling ideas, myths, symbols, and rites. Partially funded by the Jewish Chautauqua Society. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4530. Islam: Faith and Practice. 3 cr. hrs.**

Major trends of Islamic religious thought, practice, and worship. Readings from the Qur'an and other Islamic writings. Historical approach. Current issues and developments. Islam in the West. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4540. Hinduism, Yoga, and Buddhism. 3 cr. hrs.**

Religious experience, cultic act, religious organization, theological formulation, as illustrated by two religions of India, Hinduism and Buddhism. Yoga as spiritual discipline. Historical approach. Readings from sacred writings. Prereq: Jr. stdng., THEO 1001, and one second-level theology course.

**THEO 4995. Independent Study in Theology. 1-3 cr. hr.**

Prereq: Jr. stdng., THEO 1001, one second-level theology course, and cons. of dept. ch.

**THEO 4997. Capstone Seminar. 3 cr. hrs.**

Exploration of a theological topic involving issues of theological method and interrelatedness of the subdisciplines of biblical, historical, systematic and moral theology. Colloquium paper demonstrating critical analysis in a specific field. Prereq: Sr. stdng., THEO 1001, one second-level theology course, and cons. of dept. ch.

**Women and Gender Studies****WGST 1001. Introduction to Women's and Gender Studies. 3 cr. hrs.**

Introduction to the interdisciplinary field of Women's and Gender Studies, an academic area of study focused on the ways sex and gender manifest themselves in our social, cultural, and political lives. Define and learn to use key terms and concepts such as sex, gender, sexuality, embodiment, feminism, patriarchy, etc. Course materials will include classic and contemporary scholarship from a variety of disciplines, as well as personal narratives of gendered lives.

**WGST 4997. Women's and Gender Studies Capstone Course. 3 cr. hrs.**

Capstone course is designed to enable upper-level students, and especially WGST majors and minors, to integrate the knowledge and experience gained in WGST courses and use that knowledge and experience as a springboard for future work. Prereq: WGST 1001 and two other WGST courses or permission of program director.

## College of Business Administration

### From the Dean

College of Business Administration website (<http://business.marquette.edu/>)

Welcome!

As we just celebrated 100 years of Jesuit business education, it is an appropriate time to reaffirm our commitment to educating ethical, socially responsible global leaders who are prepared to excel in a dynamic business environment. Knowing that we cannot predict what future challenges our graduates will face, we equip our students with critical thinking skills and the ability to become lifelong learners. Through applied learning experiences that take place in and out of the classroom, we prepare our students to become competitive, creative and compassionate leaders who make a difference by serving business and society in their personal and professional lives.

With the generous endowment from Jim Keyes, we have begun to implement many of the ideas that emerged from our collaborative strategic planning process. While academic quality remains a top priority, we will implement new program delivery methods and expand our geographic reach through the use of distance learning and social media technologies. Remaining focused on our local markets, we are also establishing new global partnerships with universities and organizations around key academic programs. We will connect our programs and centers with business through innovative applied learning experiences and faculty and student research that has relevance and impact. Our focus on ethics and social responsibility is more than a response to current events – it has been one of the pillars of Jesuit business education at Marquette for a century.

We are pleased that our Executive MBA program is ranked in the top 20 and our part-time MBA program in the top 50 by *U.S. News & World Report*. Our alumni, who number over 20,000, play key leadership roles in companies all over the world, transforming the way we do business. They do this with their exceptional knowledge, strong leadership skills and, equally important, through an indomitable spirit that puts people first as they seek to be a force for positive change.

I look forward to accomplishing great things with our students, faculty and staff, alumni, members of the business community and friends and supporters, as we move into our second 100 years.

Linda M. Salchenberger, Ph.D.  
James H. Keyes Dean of Business Administration

## College Mission Statement

The College of Business Administration is dedicated to creating research with relevance and impact, providing innovative applied learning experiences and serving as a valued resource for business and society. Through our Jesuit tradition of scholarship, service and care for the individual, we develop ethical and socially responsible global leaders who are ready to compete in a complex and dynamic business environment. With a focus on applied learning, we create a strong community of researchers and teachers, learners, alumni, business partners and supporters who advance the practice of business through innovation.

## Undergraduate Program Description

Professional undergraduate business education at Marquette University provides students with an educational foundation that prepares them to be socially responsible global leaders. This requires a focus on preparing individuals for responsibility in all aspects of their lives in an era of constant change. It implies that we will strive to graduate men and women who not only will become highly competent



professionals, but whose careers will be built on integrity and the highest values of professional and personal conduct.

The College of Business Administration stresses three elements of business education: perspectives, knowledge and skills. The first is grounded in the liberal arts traditions of Marquette University and builds on the Core of Common Studies taken by all of our students. It is built on the premise that an effective business leader will develop a deep understanding of the religious, cultural, social, political, economic, international, scientific and technical environments in which individuals and organizations exist. This helps our students develop their own internalized value systems and prepares them to apply these values broadly throughout their lives. It also enables them to place business decisions in a larger context, developing an understanding of the potential impact of business actions more broadly on society. We believe that a liberal education is a necessary part of a professional education, and our curriculum is structured on this premise.

The College of Business Administration builds on the foundational educational experience provided by University Core of Common Studies. It does this through a college curriculum that amplifies and deepens the knowledge, skills and values imparted to students in the nine knowledge areas of the Common Core, and by offering students the opportunity to develop specialized knowledge and skills in a variety of undergraduate majors and minors. The College of Business Administration extends the student's core experiences and focuses on further learning in pursuit of a specialized degree.

The second element focuses on knowledge of businesses and how they work. Initially, this portion of the curriculum focuses on college curriculum business knowledge required of all College of Business Administration graduates. This provides the foundation for a career as a global business leader. It provides each student with an introduction to the various functions generic to an organization such as marketing and finance and operations and supply chain management. It also stresses development of a clear understanding of the dynamics of the firm and the economy, the basic managerial and organizational concepts necessary to function in an organization, the interaction between a firm and its environment and an overall view of strategy and policy making within an organization. Building on this core, the curriculum provides the students an opportunity to specialize in a specific business area, such as accounting, information technology, human resources or international business. This prepares graduates for entry-level business positions — the start of their business careers.

Third, the curriculum stresses skills building, helping students develop their personal potential and allowing them to grow professionally as their careers progress. The building of skills in areas such as communication, quantitative analysis, team building, leadership, ethical reasoning, critical thinking and global and cultural awareness is an integral part of the curriculum throughout a student's program of study. The development of these skills prepares graduates to continue to grow and develop in a rapidly changing work environment.

## Degrees Offered

### Degrees Offered

Marquette University confers the degree bachelor of science in business administration on those students who have satisfactorily completed one of the regularly prescribed curricula of the College of Business Administration.

The master of business administration, master of science in accounting, master of science in applied economics and master of science in human resources are offered through the Marquette University Graduate School of Management. Also offered is a certificate in entrepreneurship. Details on these programs are contained in the Graduate Bulletin.

## Majors Offered

### **Majors Offered**

Majors in the College of Business Administration are offered in accounting, business economics, entrepreneurship, finance, human resource management, marketing, information technology, international business, operations and supply chain management, and real estate; students also may earn a major in general business. Students majoring in any of the majors offered by the College of Business Administration must be resident in that college to complete the major(s) and earn the corresponding degree. The college also offers minors to non-business students in business administration, entrepreneurship, human resources, information technology, marketing and operations and supply chain management.

All undergraduate majors and minors in the college are open to part-time degree students taking day classes. Courses also are available for credit or audit to non-degree students with the proper prerequisites. Part-time students are assigned to academic advisers in the college.

## Graduation Requirements

### Amount and Quality of Work

A candidate for a baccalaureate degree in business administration must earn 128 semester hours of credit. In addition to the overall requirement of a 2.000 grade point average, students enrolled in the College of Business Administration must achieve a 2.000 grade point average in all courses offered by the college. Candidates in the accounting curriculum must earn a 2.500 grade point average in all courses offered by the college.

## University Core of Common Studies and College Curriculum Requirements

### Rhetoric (R) 8 credits

|                    |                                |   |
|--------------------|--------------------------------|---|
| ENGL 1001          | Rhetoric and Composition 1 (*) | 3 |
| ENGL 1002          | Rhetoric and Composition 2 (*) | 3 |
| CMST 2300          | Business Communication         | 2 |
| Total Credit Hours |                                | 8 |

### Mathematical Reasoning (MR) 9 credits

|                    |   |   |
|--------------------|---|---|
| MATH 1390          | Finite Mathematics (*) <sup>#</sup>     | 3 |
| MATH 1400          | Elements of Calculus 1 (*) <sup>#</sup> | 3 |
| MANA 2028          | Business Statistics                     | 3 |
| Total Credit Hours |   | 9 |

<sup>#</sup>If student's MATH ACT score is greater than 28 or MATH SAT score is greater than 625, then the student may complete MATH 1450\* (4 credits) in lieu of MATH 1390 and MATH 1400. The student would still be required to complete an additional 2 elective credits.

### Individual and Social Behavior (ISB) 6 credits

|                    |                              |   |
|--------------------|------------------------------|---|
| ECON 2003          | Principles of Microeconomics | 3 |
| ECON 2004          | Principles of Macroeconomics | 3 |
| Total Credit Hours |                              | 6 |

### Diverse Cultures (DC) 3 credits

All University Core of Common Studies courses accepted for curriculum credit.\*

**Literature and Performing Arts (LPA) 3 credits**

English or foreign language literature course.\*

**Note:** This course must be a LITERATURE course from the list.

**Histories of Cultures and Societies (HCS) 3 credits**

All University Core of Common Studies courses accepted for curriculum credit.\*

**Science and Nature (SN) 3 credits**

All University Core of Common Studies courses accepted for curriculum credit.\*

**Human Nature and Ethics (HNE) 6 credits**

|                    |                                |   |
|--------------------|--------------------------------|---|
| PHIL 1001          | Philosophy of Human Nature (*) | 3 |
| PHIL 2310          | Theory of Ethics (*)           | 3 |
| Total Credit Hours |                                | 6 |

See Business Curriculum: Ethical and Societal Issues

**Theology (T) 6 credits**

|                    |                              |   |
|--------------------|------------------------------|---|
| THEO 1001          | Introduction to Theology (*) | 3 |
| THEO elective (*)  |                              | 3 |
| Total Credit Hours |                              | 6 |

(\*) fulfills UCCS and College Curriculum Requirements

**Note:** Business students may NOT double count University Core of Common Studies (UCCS) courses.

**Non-Business Electives 12 or 18 credits**

Accounting Majors must complete 12 elective credit; all other majors, 18 elective credits.

Students in the Army Military Science program (AROTC) and the Naval Science program (NROTC) may use military and naval science courses will fulfill the 12–18 credit requirement of non-business electives.

**Total non-College of Business Administration credits**

Accounting majors 59 credits

All other majors 65 credits

## Business Curriculum Courses

|   |   |    |
|---|---|----|
| LEAD 1000   | Foundations for Business Leadership   | 1  |
| <b>Note:</b> Students (with junior standing or higher) transferring into the college from another university are required to complete BUAD 1002 (Computer Literacy in Business) instead of LEAD 1000. |   |    |
| LEAD 2000   | Applying Business Leadership Skills   | 1  |
| LEAD 3000   | Strategies for the Future and Dealing in the Business Community                 | 1  |
| ACCO 2030   | Principles of Financial Accounting  | 3  |
| ACCO 2031   | Principles of Managerial Accounting   | 3  |
| ECON 3001   | Applied Business Economics (ECON majors must take 3003)                         | 3  |
| or ECON 3003  | Intermediate Microeconomic Analysis   |    |
| FINA 3001   | Introduction to Financial Management  | 3  |
| MANA 3001   | Behavior and Organization   | 3  |
| OSCM 3001   | Operations and Supply Chain Management  | 3  |
| MARK 3001   | Introduction to Marketing   | 3  |
| INTE 3001   | Introduction to Information Technology (ACCO majors must take 4050)             | 3  |
| or ACCO 4050  | Accounting Information Systems  |    |
| Select one from the following Ethical and Societal Issues courses:  |   | 3  |
| MANA 3002   | Business and Its Environment  |    |
| PHIL 4330   | Business Ethics   |    |
| FINA 4370   | Advanced Investment Management, Ethics and Society (AIM and IAIM students only) |    |
| MANA 4101   | Strategic Management  | 3  |
| Select one from the following Legal and Regulatory Environment courses:   |   | 3  |
| BULA 3001   | Legal Environment of Business   |    |
| BULA 3040   | The Legal and Regulatory Environment of International Business                  |    |
| FINA 4310   | Introduction to Applied Investment Management (AIM and IAIM students only)      |    |
| HURE 3001   | Management of Human Resources (HURE majors)                                     |    |
| Total Credit Hours  |   | 36 |

## Major Courses

Business degree students also must complete the requirements for one of the following majors: accounting, business economics, entrepreneurship, finance, human resources, information technology, marketing, operations and supply chain management, real estate, or general business. The major in international business is a second major. Double counting of courses for two or more majors is not permitted, e.g. students cannot double count FINA 4001 Advanced Financial Management for both real estate and finance majors.

At least one International Business course within or outside the major field(s) in the College of Business is required.

## Graduation Requirements

1. A minimum total credit hours of 128.
2. A minimum GPA of 2.000 must be earned in all courses taken at Marquette University.
3. A minimum GPA of 2.000 must be earned in all College of Business Administration courses taken at Marquette University (2.500 for accounting majors). A grade of C or higher must be earned in each of a student's major courses including the core courses introducing the major. For international business majors, a grade of C or better must be earned in required language courses beyond either 2002 or 2003.
4. At least one International Business elective must be completed.
5. At least 60 percent of the business credit hours required for the business degree must be taken at Marquette University.
6. On occasion, seniors will be required to take a comprehensive examination testing their grasp of the concepts, principles, and relations covered in the core business courses. A similar test might be given in any one of the majors.
7. If a student has 128 or more credits, has an overall GPA of 2.000 or higher, has an overall college GPA of 2.000 or higher (2.500 for accounting majors), but does not achieve a C or better in each of their major courses including the core course introducing the major, the student will be conferred a B.S. in Business Administration degree with a major in general business. If the student meets the overall and college minimum GPA and completes enough credits, but while attempting two or more majors, achieves a C or better in all courses for one major but not in another major, the student will be conferred a B.S. in Business Administration degree with a major in the former but not the latter.
8. It is the candidate's responsibility to meet all university academic, financial and administrative requirements and procedures as outlined elsewhere in this bulletin.

## Academic Regulations

Students in the College of Business Administration are expected to comply with the academic requirements and regulations listed in the university section of this bulletin. Amplifications and additions to the university requirements are detailed herein and govern only those students enrolled in the College of Business Administration. Procedures developed to enforce university and college regulations are available for review in the college office.

### Academic Load

The academic load of a student is measured by credit hours assigned to each course. The normal business administration program varies from 15 to 19 credit hours per term.

Request for permission to exceed 19 credit hours must be submitted in writing to the assistant dean prior to registration.

### Academic Probation and Dismissal

Students in academic difficulty are placed on academic probation by the College of Business Administration. Students in the college are expected to maintain a C (2.000) academic average overall and in all College of Business Administration courses. Students who fail to maintain progress necessary to meet university and college graduation requirements are subject to academic dismissal. A student on academic probation is directed as to what academic outcome she/he is expected to attain in the subsequent semester in order to continue enrollment. Note that students can also be placed on probation and dismissed for accumulating 15 percent of hours attempted with a grade of F.

### Attendance

A student is expected to attend every exercise of the courses in which he or she is registered. Any absence, regardless of the reason, will prevent the student from getting the full benefit of the course and renders a student liable to university censure. Since it is assumed that no college student will be absent from class without reason, this college will not differentiate officially between excused and unexcused absences.

When a student has absences in hours greater than two weeks of class periods, he or she may be dropped without warning, earning a grade of WA, at the request of the instructor or the dean of the college. After the WA grade has been issued, the student may not apply for a grade of W.

All students enrolled in courses taught by the College of Business Administration must conform to the attendance policy in effect in the College of Business Administration even though they are registered through another college or division of the university.

For more information on attendance, refer to the University Attendance Policy (p. 62) .

### Background Checks, Drug Testing

Some degrees, majors and/or courses may require a student to submit to a criminal background check and/or drug testing. The results of those checks and/or tests may affect the student's eligibility to continue in that degree, major and/or course.



## CD and D Grades

Courses completed with a grade CD or D are not counted toward the total hour requirement for the major (in the College of Business Administration) but do fulfill the subject matter requirement and do count toward the total hours required for graduation.

Credit is never given twice for the same course, with the exception of different sections of variable topic courses. Students who received the grade of CD or D in a course specific to their major or minor may need to repeat the course.

Accounting students must earn a C or better in ACCO 2030 Principles of Financial Accounting and ACCO 2031 Principles of Managerial Accounting prior to enrolling in ACCO 3001 Intermediate Accounting.

## CR/NC Option

For enrichment purposes, junior and senior students are given an option to elect one course per term (to a maximum of four courses) for which only a CR or NC grade is assigned. Quality of C or higher achievement must be maintained if a grade of CR is to be assigned.

Eligible courses include only non-business electives, which are not used to satisfy non-business core requirements. Courses for a minor or major cannot be taken under the CR/NC option. No business course may be taken under the CR/NC Option by a business administration student if the student wishes that course to fulfill a graduation requirement for either number of hours or as a required course for the core or major. LEAD, BUAD and internship grading courses are graded using the S and U grades and do not fall within the CR/NC Option.

## Declaration of Major

Each business student is encouraged to declare a major prior to registration for the junior year. All students should declare their major(s) prior to advising and registration for the senior year. All students must file applications for graduation in the main office one term prior to the term of intended graduation.

## Grade Appeals and Policy Procedures

The college adheres to university policy on grade appeals. Any appeal must begin with the instructor who assigned the grade. If a resolution cannot be reached, the department chairperson must be contacted with a written appeal. Information concerning subsequent steps can be obtained from the assistant dean of undergraduate programs or the executive associate dean. To appeal a WA grade, contact the executive associate dean of the College of Business Administration in writing within 5 business days of this notification.

## Graduation

All graduates are expected to complete the Senior Exit Survey prior to their graduation. All May graduates are required to attend the university and college Commencement ceremonies.

## Independent Study Courses

The purpose of an independent study business course (4995) is to provide an independent, directed-study experience for the qualified student. To qualify, a student must have attained senior standing, have a minimum 2.500 grade point average overall and a 3.000 grade point average in the major area or topic of which the independent study will be in. Independent study courses are not available for those courses in the same term when the course is being offered. The appropriate use of an independent study course is to allow the further pursuit of topics and issues presented in a course and/or a legitimate course of study for which no regularly scheduled course is presently offered. Obtaining permission and approval for a 4995 is contingent on the approval of the research proposal, the willingness of a specific faculty member to accept the student's proposal, and that faculty member's willingness to work with the student for the duration of the course. All 4995 courses must have written approval from the instructor and the department chair.

## Summer Sessions Study Approval

Students who plan to study in summer school at another institution must obtain written approval for each course before the summer session actually begins. If prior approval is not obtained, there is no guarantee that credits earned will be accepted by Marquette University. Course approval forms may be obtained from the College of Business Administration website. Students must earn a C grade or better in the course in order to be eligible for transfer credit; only credits transfer, not the grade.

## Transfer Students (Advanced Standing)

The College of Business Administration accepts credit from both two- and four-year educational institutions based on the university transfer policy and an individual evaluation of credits earned using the following criteria:

- a. Educational objectives and nature of the institution from which the student transfers credit.
- b. Comparability of the nature, content, and level of credit earned to that offered by the college. Courses offered on the lower division at other institutions, but at the upper division at Marquette University, are normally not acceptable. Occasionally, such courses may be validated.
- c. Appropriateness and applicability of the credit earned to the programs offered by the college, in the light of the student's goals and the nature of Marquette's education. The college will normally not accept highly technical, career oriented courses, physical education courses or courses earned in fulfillment of requirements for a professional license or certification.
- d. A C grade or better must be earned in order to be considered for transfer; only credits transfer, not the grade.

The College of Business Administration has established validation procedures for some courses taken at the lower-division level, which the college offers at the upper-division level.

Such validation is usually based on the successful completion of advanced courses in a given area and may include written examinations and/or CLEP tests. Please discuss validation with the assistant dean of undergraduate programs.

## Special Academic Programs

### Business Internship Program

The College of Business Administration offers qualified students the opportunity to participate in an applied experiential internship program, which combines practical experience with the core curriculum. The program, offered in cooperation with public, private and professional organizations includes actual experience in a carefully supervised program of productive work with a clearly defined educational objective.

Full-time degree students in the college, who have achieved junior standing and a grade point average of 2.500 overall, (3.000 in FINA, REAL and ACCO) are eligible to participate in the internship program. Credit is granted based on hours worked and the educational content of a particular offering.

Interns are full-time students whether at school or at work. When at work the intern is subject to the rules of the company and is under its direct supervision. Wages, if any, are paid directly to the student. The university does not employ the student but cooperates with business and industry in arranging such employment. Registration for each work period is required of all interns, and credit is established and graded through enrollment in the appropriate course during the following school period. For specific criteria to earn internship credit, contact the college director of the business career center. Two 3-credit internships, a maximum of one in any discipline, may be applied to the bachelor of science in business administration degree requirements. Any 1-credit internship will not fulfill any degree requirements. Contact the college director of the business career center for information.

### Pre-Law Scholars

The College of Business Administration participates in the The Pre-law Scholars program. More detailed information can be found in the university Special Programs (p. 34) section of this bulletin.

### ROTC Programs

Students in the Army Military Science program (AROTC) and the Naval Science program (NROTC) may enroll in any of the curricula offered by the College of Business Administration. In doing so, more than the 128 credit hours normally required for graduation are necessary. Also, military and naval science courses will fulfill the 12–18 credit requirement of non-business electives.

### Student Financial Aid

While most financial aid is awarded by the Office of Student Financial Aid, some scholarship funds are available through the College of Business Administration. Interested students should contact the executive associate dean of the college. Scholarships are available to incoming freshmen and transfer students and are primarily awarded on academic merit. Scholarships are also available to prospective sophomores, juniors and seniors with a cumulative GPA of 3.00 or better. Prospective students must complete and submit an application for scholarships in the main office during the latter half of the spring semester to be considered for scholarship funds for the subsequent academic year.

## Curricula Information

### Typical Four-Year Schedule for all Business Majors (except Accounting)

| Freshman  |       |                                       |       |
|---|-------|---------------------------------------|-------|
| First Term                                      | Hours | Second Term                           | Hours |
| LEAD 1000                                       | 1     | ENGL 1002                             | 3     |
| ENGL 1001                                       | 3     | MATH 1400                             | 3     |
| MATH 1390                                       | 3     | PHIL 1001                             | 3     |
| THEO 1001                                       | 3     | HIST or SCIENCE elective              | 3     |
| HIST or SCIENCE elective                        | 3     | Non Business elective #2 <sup>c</sup> | 3     |
| Non Business elective #1 <sup>c</sup>           | 3     |                                       |       |
|   | 16    |                                       | 15    |
| Sophomore                                       |       |                                       |       |
| First Term                                      | Hours | Second Term                           | Hours |
| LEAD 2000 <sup>a</sup>                          | 1     | ACCO 2031                             | 3     |
| MANA 2028 (or THEO elective)                    | 3     | ECON 2004                             | 3     |
| ACCO 2030                                       | 3     | PHIL 2310 (or Literature elective)    | 3     |
| ECON 2003                                       | 3     | Non Business elective #4 <sup>c</sup> | 3     |
| PHIL 2310 (or Literature elective) <sup>c</sup> | 3     | MANA 2028 (or THEO elective)          | 3     |
| Non Business elective #3 <sup>c</sup>           | 3     | CMST 2300 <sup>a</sup>                | 2     |
|   | 16    |                                       | 17    |
| Junior  |       |                                       |       |
| First Term                                      | Hours | Second Term                           | Hours |
| LEAD 3000 <sup>a</sup>                          | 1     | MANA 3001 <sup>b</sup>                | 3     |
| FINA 3001 <sup>b</sup>                          | 3     | Business elective #1 <sup>d</sup>     | 3     |
| MARK 3001 <sup>b</sup>                          | 3     | Business elective #2 <sup>d</sup>     | 3     |
| OSCM 3001 <sup>b</sup>                          | 3     | Diverse Culture elective <sup>b</sup> | 3     |
| INTE 3001 <sup>b</sup>                          | 3     | Non Business elective #5 <sup>c</sup> | 3     |

|  |              |                                   |              |
|--|--------------|-----------------------------------|--------------|
| ECON 3001 (if ECON major, replace with ECON 3003) <sup>b</sup> | 3            | Legal/Reg. elective <sup>b*</sup> | 3            |
|  | 16           |                                   | 18           |
| <b>Senior</b>  |              |                                   |              |
| <b>First Term</b>  | <b>Hours</b> | <b>Second Term</b>                | <b>Hours</b> |
| Business elective #3 <sup>d</sup>                              | 3            | Business elective #6 <sup>d</sup> | 3            |
| Business elective #4 <sup>d</sup>                              | 3            | Business elective #7 <sup>d</sup> | 3            |
| Business elective #5 <sup>d</sup>                              | 3            | Business elective #8 <sup>d</sup> | 3            |
| MANA 3002, PHIL 4330, or FINA 4370 <sup>a</sup>                | 3            | Business elective #9 <sup>d</sup> | 3            |
| Non Business elective #6 <sup>c</sup>                          | 3            | MANA 4101 <sup>a</sup>            | 3            |
|  | 15           |                                   | 15           |
| Total credit hours: 128  |              |                                   |              |

- a Assuming prerequisites are met, course can be taken in either fall or spring semester of the respective year.
- b Assuming prerequisites are met, course can be taken either semester of junior year.
- c If international business major, this should be foreign language.
- d One business elective must be an international business course.

## Typical Four-year Schedule for Accounting Majors

|                                       |              |                                       |              |
|---------------------------------------|--------------|---------------------------------------|--------------|
| <b>Freshman</b>                       |              |                                       |              |
| <b>First Term</b>                     | <b>Hours</b> | <b>Second Term</b>                    | <b>Hours</b> |
| LEAD 1000                             | 1            | ENGL 1002                             | 3            |
| ENGL 1001                             | 3            | MATH 1400                             | 3            |
| MATH 1390                             | 3            | PHIL 1001                             | 3            |
| THEO 1001                             | 3            | HIST or SCIENCE elective              | 3            |
| HIST or SCIENCE elective              | 3            | Non Business elective #2 <sup>c</sup> | 3            |
| Non Business elective #1 <sup>c</sup> | 3            |                                       |              |
|                                       | 16           |                                       | 15           |

| <b>Sophomore</b>                      |              |                                       |              |
|---------------------------------------|--------------|---------------------------------------|--------------|
| <b>First Term</b>                     | <b>Hours</b> | <b>Second Term</b>                    | <b>Hours</b> |
| LEAD 2000 <sup>a</sup>                | 1            | ACCO 2031                             | 3            |
| MANA 2028 (or THEO elective)          | 3            | ECON 2004                             | 3            |
| ACCO 2030                             | 3            | PHIL 2310 (or Literature elective)    | 3            |
| ECON 2003                             | 3            | Non Business elective #4 <sup>c</sup> | 3            |
| PHIL 2310 (or Literature elective)    | 3            | MANA 2028 (or THEO elective)          | 3            |
| Non Business elective #3 <sup>c</sup> | 3            | CMST 2300 <sup>a</sup>                | 2            |
|                                       | 16           |                                       | 17           |
| <b>Junior</b>                         |              |                                       |              |
| <b>First Term</b>                     | <b>Hours</b> | <b>Second Term</b>                    | <b>Hours</b> |
| LEAD 3000 <sup>a</sup>                | 1            | MANA 3001 <sup>b</sup>                | 3            |
| FINA 3001 <sup>b</sup>                | 3            | ACCO 4020                             | 3            |
| ACCO 3001                             | 3            | BULA 4001                             | 3            |
| BULA 3001                             | 3            | ACCO 4000                             | 3            |
| OSCM 3001 <sup>b</sup>                | 3            | ECON 3001 <sup>b</sup>                | 3            |
| MARK 3001 <sup>b</sup>                | 3            | ACCO 4050                             | 3            |
|                                       | 16           |                                       | 18           |
| <b>Senior</b>                         |              |                                       |              |
| <b>First Term</b>                     | <b>Hours</b> | <b>Second Term</b>                    | <b>Hours</b> |
| ACCO 4010                             | 3            | Diverse Culture elective <sup>b</sup> | 3            |
| ACCO elective <sup>d</sup>            | 3            | ACCO 4030                             | 3            |
| MANA 3002 or PHIL 4330 <sup>a</sup>   | 3            | MANA 4101 <sup>a</sup>                | 3            |
| ACCO elective <sup>d</sup>            | 3            | ACCO elective <sup>d</sup>            | 3            |
| Business elective #1 <sup>d</sup>     | 3            | Business elective #2 <sup>d</sup>     | 3            |
|                                       | 15           |                                       | 15           |
| Total credit hours: 128               |              |                                       |              |

- a Assuming prerequisites are met, course can be taken in either fall or spring semester of the respective year.
- b Assuming prerequisites are met, course can be taken either semester of junior year.
- c If international business major, this should be foreign language.
- d One business elective must be an international business course.

# Accounting

**Chairperson: Michael D. Akers, Ph.D.**

Department of Accounting website (<http://business.marquette.edu/departments/accounting>)

The curriculum in accounting is designed to accomplish many specific objectives, the most important of which are: critical thinking, oral communication, business writing ability, technical knowledge and skills needed for an entry level accounting position and technical knowledge needed for the Certified Public Accounting Examination.

The individual course descriptions below focus primarily on content, as opposed to process. The accounting curriculum reflects the faculty's commitment to excellence and breadth. The faculty use a wide variety of methods to enhance the learning process. Accounting courses include computer assignments, team projects, oral reports and term papers and they cover ethical and international accounting issues. The department offers a group of electives in tax research, international accounting, financial statement analysis, accounting theory and government accounting. Some of the electives are seminars in which students are regularly involved in class discussions and report writing and presentation. Several courses also call for class presentations by the students.

## Accounting Major

|  |  |    |
|--|--|----|
| ACCO 3001  | Intermediate Accounting                    | 3  |
| ACCO 4000  | Accounting Communications                  | 3  |
| ACCO 4010  | Individual Income Taxation                 | 3  |
| ACCO 4020  | Advanced Accounting 1                      | 3  |
| ACCO 4030  | Cost Accounting                            | 3  |
| BULA 4001  | Business Law                               | 3  |
| Three of the following electives:                |  | 9  |
| ACCO 4040  | International Accounting                   |    |
| ACCO 4045  | International Taxation                     |    |
| ACCO 4080  | Analysis of Corporate Financial Statements |    |
| ACCO 4119  | Tax Research                               |    |
| ACCO 4170  | Auditing                                   |    |
| ACCO 4986  | Accounting Internship - Grading Period     |    |
| And selected graduate ACCO courses, if approved. |  |    |
| Two Business electives                           |  | 6  |
| Total Credit Hours                               |  | 33 |

Wisconsin and Illinois, as well as most states, require students to complete 150 semester hours, including a bachelor's degree in accounting, to qualify for the CPA exam. Many students may prefer to meet this requirement by earning a graduate degree in addition to their undergraduate degree. Marquette's accounting program offers a master of science in accounting degree which meets the



150-hour requirement. For information, consult the Graduate School of Management section of the Graduate Bulletin or contact the Department of Accounting at (414) 288-7340.

## Business Administration

Students may earn a General Business major (27 credits) by completing nine upper division business electives.

## Business Economics

**Chairperson: Abdur R. Chowdhury, Ph.D.**

Department of Economics website (<http://business.marquette.edu/departments/economics>)

### Business Economics Major

|   |                                     |    |
|---|-------------------------------------|----|
| ECON 3004   | Intermediate Macroeconomic Analysis | 3  |
| ECON 4060   | Introduction to Econometrics        | 3  |
| Three upper-division ECON electives (excluding ECON 4986) |                                     | 9  |
| Four Business and/or Economics electives                  |                                     | 12 |
| Total Credit Hours  |                                     | 27 |

In addition to the bachelor's degree program outlined above, the Department of Economics offers a special five-year program enabling students to earn an undergraduate degree and a master of science in applied economics (MSAE) degree. For information, consult the Graduate School of Management section of the Graduate Bulletin or contact the Department of Economics at (414) 288-7377.

# Entrepreneurship

**Department of Management Chairperson: Cheryl L. Maranto, Ph.D.**

Department of Management website (<http://business.marquette.edu/departments/management>)

## Entrepreneurship Major

Specific Entrepreneurship Course Requirements:

|  |  |    |
|--|--|----|
| ENTP 3001  | Understanding Entrepreneurship                   | 3  |
| ENTP 4010  | New Venture Creation                             | 3  |
| Three electives from the following courses, one of which must be 4986 or 4020:                 |  | 9  |
| ENTP 4020  | Consulting to Entrepreneurs                      |    |
| ENTP 4080  | Entrepreneurial Finance                          |    |
| ENTP 4931  | Topics in Entrepreneurship                       |    |
| ENTP 4953  | Seminar in Entrepreneurship                      |    |
| ENTP 4986  | Entrepreneurship Internship - Grading Period     |    |
| ACCO 4080  | Analysis of Corporate Financial Statements       |    |
| BULA 4001  | Business Law                                     |    |
| MANA 3034  | Negotiations and New Ventures                    |    |
| MARK 4060  | Marketing Research                               |    |
| MARK 4094  | Sales Management                                 |    |
| REAL 3001  | Principles of Commercial Real Estate Development |    |
| <b>Note:</b> other business electives may be substituted; consult the Entrepreneurship adviser |  |    |
| Four Business electives  |  | 12 |
| Total Credit Hours   |  | 27 |

# Finance

**Chairperson: Sarah W. Peck, Ph.D.**

Department of Finance website (<http://business.marquette.edu/departments/finance>)

## Finance Major

Specific Finance Course Requirements:

|                                 |   |    |
|---------------------------------|---|----|
| FINA 4001                       | Advanced Financial Management             | 3  |
| FINA 4011                       | Investment Analysis                       | 3  |
| Three of the following courses: |   | 9  |
| FINA 4002                       | Commercial Real Estate Finance            |    |
| FINA 4020                       | Financial Planning                        |    |
| FINA 4030                       | Bank Management                           |    |
| FINA 4040                       | International Finance                     |    |
| FINA 4060                       | Introduction to Financial Derivatives     |    |
| FINA 4065                       | Fixed Income Securities                   |    |
| FINA 4070                       | Investment Management, Ethics and Society |    |
| FINA 4080                       | Entrepreneurial Finance                   |    |
| FINA 4081                       | Investment Banking                        |    |
| FINA 4082                       | Alternative Investments                   |    |
| FINA 4953                       | Seminar in Finance                        |    |
| FINA 4112                       | Investment Management                     |    |
| FINA 4931                       | Topics in Finance                         |    |
| FINA 4986                       | Finance Internship - Grading Period       |    |
| Four Business electives         |   | 12 |
| Total Credit Hours              |   | 27 |

## AIM Program

### Applied Investment Management (AIM) Program

Marquette is home to one of the nation's top undergraduate programs in applied investment management. The AIM program allows a select group of finance majors to get hands-on academic and security analysis experience, including summer internships and an opportunity to actively manage an equity and fixed-income portfolio throughout their senior year. Students will study the core body of knowledge covered in the Chartered Financial Analyst (CFA®) Level I exam — preparing them to take the test upon graduation — and begin a career in the money management industry.

The International Applied Investment Management (IAIM) program combines an International Business major with the AIM program with a goal of producing proficient and ethical research analysts with a global focus. The IAIM program provides the opportunity for a select number of double majors in international business and finance or accounting to receive the academic and practical experience in security analysis with an international concentration. Students are required to have a summer internship in an international setting and will actively manage a portfolio of global-fixed income and equity securities during their senior year. With their AIM cohorts, these select students will study the core body of knowledge covered in the CFA® Level I exam that will prepare them to take the test upon graduation.

Students apply to the AIM program during the fall semester of their junior year and notification of acceptance occurs prior to the end of the semester. Acceptance into these programs is limited and based on:

- Grades earned to date of application (GPA > 3.000)
- Resume and references
- Essay
- Interview

Interviews for the summer internships will begin after acceptance into the program.

### Academic Expectations for AIM Students

a. Students accepted into the AIM program must earn a B or better (no withdrawals allowed) in the following courses: \*\*

|           |   |   |
|-----------|---|---|
| ACCO 3001 | Intermediate Accounting                       | 3 |
| ACCO 4080 | Analysis of Corporate Financial Statements    | 3 |
| FINA 3001 | Introduction to Financial Management          | 3 |
| FINA 4001 | Advanced Financial Management                 | 3 |
| FINA 4011 | Investment Analysis                           | 3 |
| FINA 4065 | Fixed Income Securities                       | 3 |
| FINA 4310 | Introduction to Applied Investment Management | 3 |
| FINA 4320 | Research and Financial Analysis               | 3 |

|           |  |   |
|-----------|--|---|
| FINA 4330 | Valuation and Portfolio Management                 | 3 |
| FINA 4370 | Advanced Investment Management, Ethics and Society | 3 |

One of the following:

|           |                                       |
|-----------|---------------------------------------|
| FINA 4060 | Introduction to Financial Derivatives |
| FINA 4081 | Investment Banking                    |
| FINA 4112 | Investment Management                 |
| FINA 4082 | Alternative Investments               |
| ECON 4060 | Introduction to Econometrics          |
| ACCO 4020 | Advanced Accounting 1                 |

One of the following:

|           |                                |
|-----------|--------------------------------|
| ACCO 4040 | International Accounting       |
| ECON 4044 | International Currency Markets |
| FINA 4040 | International Finance          |

---

|                    |    |
|--------------------|----|
| Total Credit Hours | 30 |
|--------------------|----|

**Note:** Any waivers/transfers of course requirements must be approved by BOTH the AIM director and the dean's office.

b. Students in the IAIM program must earn a B or better (no withdrawals allowed) in the following courses beyond those listed in (a.):

- ECON 4044 International Currency Markets (may also count for elective above)
- Three International Business electives

c. All students in the AIM and IAIM program must complete an internship in the summer between the junior and senior years. If the student wishes to earn credit they may register for the appropriate international course ( FINA 4986 Finance Internship - Grading Period for AIM or INBU 4986 International Business Internship - Grading Period for IAIM). Students in the IAIM program must also meet the language proficiency and study abroad components of international business majors.

d. Have an overall cumulative 3.000 grade point average at the end of the second semester of their junior year and a cumulative 3.250 grade point average at the end of the first semester of their senior year for all College of Business classes.

e. Carry a typical course load of 15-18 credit hours per semester.

f. Failure to meet academic standards in any semester will result in student being dropped from AIM or IAIM programs. The decision to drop a student from the AIM or IAIM programs is at the sole discretion of the AIM director.

g. Any appeal of the decision to be dropped from the program must begin with the AIM Director. The decision of the finance chair can be appealed to the associate dean of the College of Business Administration. Finally, the student may appeal the decision to the dean of the College of Business Administration. The dean's decision will be final. If a resolution cannot be reached, the department chairperson must be contacted with a written appeal.

h. If at any time a student leaves or is dropped from AIM or IAIM programs, all credits earned at that point will be counted toward the finance and/or International Business majors.

For more information, including the specific curriculum and expectations for accounting majors in the AIM and IAIM programs, contact the AIM director, Dr. David Krause at (414) 288-1457 or the AIM website.



# Human Resources

**Department of Management Chairperson: Cheryl L. Maranto, Ph.D.**

Department of Management website (<http://business.marquette.edu/departments/management>)

## Human Resources Major

Specific Human Resource Course Requirements:

|                         |   |
|-------------------------|---|
| Three of the following: | 9   |
| HURE 4005               | Employee Benefit Systems                    |
| HURE 4010               | Compensation of Human Resources             |
| HURE 4030               | Employment of Human Resources               |
| HURE 4080               | Training and Development                    |
| Two of the following:   | 6   |
| HURE 4003               | Employment Law                              |
| HURE 4005               | Employee Benefit Systems                    |
| HURE 4010               | Compensation of Human Resources             |
| HURE 4020               | Labor Relations and Collective Bargaining   |
| HURE 4030               | Employment of Human Resources               |
| HURE 4050               | Human Resources Information Systems         |
| HURE 4080               | Training and Development                    |
| HURE 4931               | Topics in Human Resources                   |
| HURE 4953               | Seminar in Human Resources                  |
| HURE 4986               | Human Resources Internship - Grading Period |
| MANA 3035               | Diversity in Organizations                  |
| MANA 4010               | Motivation and Leadership                   |
| Four Business electives | 12  |
| Total Credit Hours      | 27  |

In addition to the human resources major described above, a special five-year program is offered which enables students to earn an undergraduate degree with a major in human resources and a master of science degree in human resources (MSHR). For information, consult the Graduate School of Management section of the Graduate Bulletin or the director of the Master's in Human Resources program at (414) 288-3643.

# Information Technology

**Department of Management Chairperson: Cheryl L. Maranto, Ph.D.**

Department of Management website (<http://business.marquette.edu/departments/management>)

## Information Technology Major

Specific Information Technology Course Requirements:

|                         |  |    |
|-------------------------|--|----|
| INTE 2051               | Business Applications Development                  | 3  |
| INTE 4052               | Data Base Management Systems                       | 3  |
| INTE 4158               | Systems Analysis and Design                        | 3  |
| Two of the following:   |  | 6  |
| INTE 3053               | Project Management                                 |    |
| INTE 4054               | Emerging Technologies                              |    |
| INTE 4055               | Web-based Applications                             |    |
| INTE 4931               | Topics in Information Technologies                 |    |
| INTE 4953               | Seminar in Information Technology                  |    |
| INTE 4986               | Information Technology Internship - Grading Period |    |
| Four Business electives |  | 12 |
| Total Credit Hours      |  | 27 |

# International Business

**Program Director: Jamshid C. Hosseini, Ph.D.**

Department of International Business website (<http://business.marquette.edu/departments/international-business>)

## International Business

### (12 credits plus an additional major in the college)

Students completing the international business major must also complete another major in business. Double counting of courses for two majors is not permitted.

Select four electives from:

12

|           |  |
|-----------|--|
| ECON 4042 | International Antitrust and Competition Policy                   |
| ECON 4044 | International Currency Markets                                   |
| ECON 4045 | Comparative Economic Development                                 |
| ECON 4046 | International Trade  |
| ECON 4048 | The Russian Economy  |
| BULA 3040 | The Legal and Regulatory Environment of International Business   |
| BUAD 2986 | Applied Business Learning Experience-Grading Period              |
| ACCO 4040 | International Accounting   |
| ACCO 4045 | International Taxation   |
| FINA 4040 | International Finance  |
| MANA 4040 | International Management   |
| MARK 4040 | International Marketing  |
| INBU 4141 | International Business Strategy                                  |
| INBU 4951 | Marquette Led Travel and Study Abroad in International Business: |
| INBU 4953 | Seminar in International Business:                               |
| INBU 4986 | International Business Internship - Grading Period               |
| OSCM 4040 | Globalization and Global Supply Chain                            |

Total Credit Hours

12

One of the four electives above must be either ECON 4044 International Currency Markets or ECON 4046 International Trade. A maximum of two international business electives can be economics.

**Note:** BULA 4030 may not double count as Legal elective and IB major elective

**Foreign Language** - Working competency in a least one approved foreign language is required, satisfied by either 1) completing foreign language courses (3001 and another upper division elective)

in Arabic, Chinese, French, German, Japanese, Italian, or Spanish; or 2) if passing a reading, writing, speaking and listening working competency test in a foreign language taught at Marquette University as endorsed by the Department of Foreign Languages and Literatures. Permission to take this competency test is granted by the director of International Business Studies.

**Note:** Foreign students whose native language is not English may have the language competency requirement waived subject to the approval of the director of International Business Studies.

**Study or Work Abroad** - Completion of a work or study abroad summer or term program is required.

(**Note:** A term or academic year abroad may result in more than eight terms needed to complete the business degree.) Approval of the study/work abroad experience is subject to prior, written approval by the director of International Business Studies or IAIM programs

# Marketing

**Chairperson: Syed H. Akhter, Ph.D.**

Department of Marketing website (<http://business.marquette.edu/departments/marketing>)

## Marketing Major

Specific Marketing Course Requirements:

|                         |   |    |
|-------------------------|---|----|
| MARK 4060               | Marketing Research                            | 3  |
| MARK 4110               | Marketing Management                          | 3  |
| Three of the following: |   | 9  |
| MARK 4005               | Sport Marketing                               |    |
| MARK 4006               | Business-to-Business Marketing                |    |
| MARK 4010               | Consumer Behavior                             |    |
| MARK 4020               | Integrated Marketing Communications           |    |
| MARK 4030               | Customer Relationship Management              |    |
| MARK 4050               | e-Marketing Strategy                          |    |
| MARK 4051               | Direct Marketing                              |    |
| MARK 4070               | Marketing and Society                         |    |
| MARK 4080               | Product and Pricing Strategy                  |    |
| MARK 4085               | Marketing Logistics and Distribution Strategy |    |
| MARK 4094               | Sales Management                              |    |
| MARK 4095               | Retailing Management                          |    |
| MARK 4931               | Topics in Marketing                           |    |
| MARK 4953               | Seminar in Marketing                          |    |
| MARK 4986               | Marketing Internship - Grading Period         |    |
| Four Business electives |   | 12 |
| Total Credit Hours      |   | 27 |

# Operations and Supply Chain Management

**Department of Management Chairperson: Cheryl L. Maranto, Ph.D.**

Department of Management website (<http://business.marquette.edu/departments/management>)

## Operations and Supply Chain Management Major

Specific Operations and Supply Chain Management Requirements:

|                         |  |    |
|-------------------------|--|----|
| OSCM 4010               | Manufacturing Management   | 3  |
| OSCM 4030               | Supply Chain Strategy and Practice                                 | 3  |
| Three electives from:   |  | 9  |
| OSCM 4015               | Service Management   |    |
| OSCM 4020               | Quality and Process Management                                     |    |
| OSCM 4040               | Globalization and Global Supply Chain                              |    |
| OSCM 4060               | Decision Modeling in Operations and Supply Chain Management        |    |
| OSCM 4931               | Topics in Operations and Supply Chain Management                   |    |
| OSCM 4953               | Seminar in Operations and Supply Chain Management                  |    |
| OSCM 4986               | Operations and Supply Chain Management Internship - Grading Period |    |
| INTE 4052               | Data Base Management Systems                                       |    |
| MANA 4040               | International Management   |    |
| Four Business electives |  | 12 |
| Total Credit Hours      |  | 27 |

# Real Estate

**Department of Finance Chairperson: Sarah W. Peck, Ph.D.**

Department of Finance website (<http://business.marquette.edu/departments/finance-real-estate>)

## Real Estate Major

Specific Real Estate Course Requirements:

|  |  |    |
|--|--|----|
| REAL 3001  | Principles of Commercial Real Estate Development | 3  |
| REAL 4002  | Commercial Real Estate Finance                   | 3  |
| Three of the following: (with at least one of REAL 4110 or 4120) |  | 9  |
| REAL 4110  | Commercial Real Estate Valuation                 |    |
| REAL 4120  | Cases in Commercial Real Estate                  |    |
| REAL 4931  | Topics in Real Estate                            |    |
| REAL 4986  | Real Estate Internship - Grading Period          |    |
| FINA 4011  | Investment Analysis                              |    |
| ENTP 4010  | New Venture Creation                             |    |
| or MANA 3034   | Negotiations and New Ventures                    |    |
| ECON 4012  | Urban and Regional Economics                     |    |
| MARK 4060  | Marketing Research                               |    |
| ACCO 4080  | Analysis of Corporate Financial Statements       |    |
| REAL 4953  | Seminar in Real Estate                           |    |
| Four Business electives  |  | 12 |
| Total Credit Hours   |  | 27 |

## Minors Offered

The following minors are intended to provide a business background for students not enrolled in the College of Business Administration. **These minors are not available to students in the College of Business Administration.**

### Minor in Business Administration

#### Required Courses

|                    |                                      |    |
|--------------------|--------------------------------------|----|
| BUAD 1002          | Computer Literacy in Business        | 0  |
| ACCO 2030          | Principles of Financial Accounting   | 3  |
| ACCO 2031          | Principles of Managerial Accounting  | 3  |
| ECON 2003          | Principles of Microeconomics         | 3  |
| ECON 2004          | Principles of Macroeconomics         | 3  |
| MANA 2028          | Business Statistics <sup>1</sup>     | 3  |
| FINA 3001          | Introduction to Financial Management | 3  |
| MANA 3001          | Behavior and Organization            | 3  |
| MARK 3001          | Introduction to Marketing            | 3  |
| Total Credit Hours |                                      | 24 |

<sup>1</sup> MATH 1700, MATH 4720 or PSYC 2001 may be substituted.

- A C grade or better must be earned in each course except BUAD 1002 Computer Literacy in Business; student must earn a passing grade (SNC) in BUAD 1002 Computer Literacy in Business.
- All minor courses must be taken at Marquette; the assistant dean in the College of Business Administration must approve any transfer of credits.
- Undergraduate students outside the College of Business Administration should limit their enrollment in business courses (excluding ECON 2003 Principles of Microeconomics and ECON 2004 Principles of Macroeconomics) to no more than 25 percent of the total credit hours applied to their degree programs.

### Minor in Entrepreneurship

#### Required Courses

|              |  |   |
|--------------|--|---|
| ECON 1001    | Introduction to Economics <sup>1</sup> | 3 |
| or ECON 2003 | Principles of Microeconomics           |   |
| MANA 2028    | Business Statistics <sup>2</sup>       | 3 |



|  |   |    |
|--|---|----|
| ENTP 2000                                      | Accounting and Finance Fundamentals for Non-Business Majors | 3  |
| or ACCO 2030                                   | Principles of Financial Accounting                          |    |
| ENTP 3001                                      | Understanding Entrepreneurship                              | 3  |
| ENTP 4010                                      | New Venture Creation  | 3  |
| One of the following business electives:       |   | 3  |
| ENTP 4020                                      | Consulting to Entrepreneurs                                 |    |
| ENTP 4931                                      | Topics in Entrepreneurship                                  |    |
| MANA 3034                                      | Negotiations and New Ventures                               |    |
| INTE 3001                                      | Introduction to Information Technology                      |    |
| OSCM 3001                                      | Operations and Supply Chain Management                      |    |
| MARK 3001                                      | Introduction to Marketing                                   |    |
| Applied Experiential Course (AEC) <sup>3</sup> |   | 3  |
| Total Credit Hours                             |   | 21 |

- 1 Course fulfills the Individual and Social Behavior requirements of the University Core of Common Studies.
- 2 MATH 1700 Modern Elementary Statistics, MATH 4720 Statistical Methods, PSYC 2001 Psychological Measurements and Statistics, or SOCI 2060 Social Statistics may be substituted.
- 3 This pre-approved course may be from the student's own major. (**Note:** such courses are listed for every department at Marquette, although nomenclature varies; e.g., internships, field experience, co-op semester, clinical experience, senior design, etc.) In addition, other classroom-based or traditional courses may qualify to fulfill this requirement. The AEC courses must be pre-approved to ensure that they (a) include significant experiential or hands-on learning and (b) relate materially to venture possibilities broadly construed. In some cases students may be approved for six AEC hours, in which the business elective above is waived.

- A grade of C or better must be earned in each course.
- All minor courses must be taken at Marquette; the assistant dean in the College of Business Administration must approve any transfer credits.

## Minor in Human Resources

### Required Courses

|           |                                    |   |
|-----------|------------------------------------|---|
| ACCO 2030 | Principles of Financial Accounting | 3 |
| ECON 2003 | Principles of Microeconomics       | 3 |
| MANA 2028 | Business Statistics <sup>1</sup>   | 3 |

|  |   |    |
|--|---|----|
| HURE 3001                              | Management of Human Resources             | 3  |
| Three of the following HURE electives: |   | 9  |
| MANA 3035                              | Diversity in Organizations                |    |
| or MANA 3001                           | Behavior and Organization                 |    |
| HURE 4005                              | Employee Benefit Systems                  |    |
| HURE 4010                              | Compensation of Human Resources           |    |
| HURE 4020                              | Labor Relations and Collective Bargaining |    |
| HURE 4030                              | Employment of Human Resources             |    |
| HURE 4080                              | Training and Development                  |    |
| HURE 4931                              | Topics in Human Resources                 |    |
| HURE 4953                              | Seminar in Human Resources                |    |
| ECON 4020                              | Economics of Labor Markets                |    |
| Total Credit Hours                     |   | 21 |

1 MATH 1700 Modern Elementary Statistics , MATH 4720 Statistical Methods, PSYC 2001 Psychological Measurements and Statistics or SOCI 2060 Social Statistics may be substituted.

- A C grade or better must be earned in each course.
- All minor courses must be taken at Marquette; the assistant dean in the College of Business Administration must approve any transfer of credits.

The College of Business Administration offers a special five-year program, which enables students to earn a minor in human resources as part of their undergraduate degree and a master of science in human resources (M.S.H.R.) degree. For information, consult the Graduate Bulletin or the director of the M.B.A. in Human Resources program at (414) 288-3643.

## Minor in Information Technology

### Required Courses

|           |  |   |
|-----------|--|---|
| ACCO 2030 | Principles of Financial Accounting     | 3 |
| ECON 2003 | Principles of Microeconomics           | 3 |
| MANA 2028 | Business Statistics <sup>1</sup>       | 3 |
| INTE 3001 | Introduction to Information Technology | 3 |
| INTE 4052 | Data Base Management Systems           | 3 |
| INTE 4158 | Systems Analysis and Design            | 3 |

One of the following:

3

|                    |                                    |    |
|--------------------|------------------------------------|----|
| INTE 2051          | Business Applications Development  |    |
| INTE 3053          | Project Management                 |    |
| INTE 4054          | Emerging Technologies              |    |
| INTE 4055          | Web-based Applications             |    |
| INTE 4931          | Topics in Information Technologies |    |
| INTE 4953          | Seminar in Information Technology  |    |
| Total Credit Hours |                                    | 21 |

1 MATH 1700 Modern Elementary Statistics , MATH 4720 Statistical Methods, PSYC 2001 Psychological Measurements and Statistics or SOCI 2060 Social Statistics may be substituted.

- A C grade or better must be earned in each course.
- All minor courses must be taken at Marquette; the assistant dean in the College of Business Administration must approve any transfer of credits.

## Minor in Marketing

### Required Courses

|                           |                                  |    |
|---------------------------|----------------------------------|----|
| ECON 2003                 | Principles of Microeconomics     | 3  |
| MANA 2028                 | Business Statistics <sup>1</sup> | 3  |
| MARK 3001                 | Introduction to Marketing        | 3  |
| MARK 4060                 | Marketing Research               | 3  |
| Three marketing electives |                                  | 9  |
| Total Credit Hours        |                                  | 21 |

1 MATH 1700 Modern Elementary Statistics, MATH 4720 Statistical Methods or PSYC 2001 Psychological Measurements and Statistics may be substituted.

- A C grade or better must be earned in each course.
- All minor courses must be taken at Marquette; the assistant dean in the College of Business Administration must approve any transfer of credits.

## Minor in Operations and Supply Chain Management

### Required Courses

|                          |   |    |
|--------------------------|---|----|
| ACCO 2030                | Principles of Financial Accounting                | 3  |
| ECON 2003                | Principles of Microeconomics                      | 3  |
| MANA 2028                | Business Statistics <sup>1</sup>                  | 3  |
| OSCM 3001                | Operations and Supply Chain Management            | 3  |
| Three of the following:  |   | 9  |
| OSCM 4010                | Manufacturing Management                          |    |
| OSCM 4015                | Service Management                                |    |
| OSCM 4020                | Quality and Process Management                    |    |
| OSCM 4030                | Supply Chain Strategy and Practice                |    |
| OSCM 4931                | Topics in Operations and Supply Chain Management  |    |
| OSCM 4953                | Seminar in Operations and Supply Chain Management |    |
| <hr/> Total Credit Hours |   | 21 |

<sup>1</sup> MEEN 3426 Engineering Statistics, MATH 1700 Modern Elementary Statistics, MATH 4720 Statistical Methods, PSYC 2001 Psychological Measurements and Statistics or SOCI 2060 Social Statistics may be substituted.

- A C grade or better must be earned in each course.
- All minor courses must be taken at Marquette; the assistant dean in the College of Business Administration must approve any transfer of credits.

## Student Organizations

The College of Business Administration supports student organizations intended to cultivate academic, professional, career and social interests of business students and related majors. The presidents of each business student organization serve as an advisory council to the dean, meeting several times each term. To inquire about business student organizations activities and membership, ask your adviser or the dean's office.

### Honor Societies

#### Beta Gamma Sigma

Beta Gamma Sigma is the international honor society for students enrolled in business schools accredited by the AACSB—International (Association for the Advancement of Collegiate Schools of Business).

The Marquette chapter was founded in 1929 "to encourage and reward scholarship and accomplishment among students of business and administration, to promote the advancement of education in the art and science of business, and to foster integrity in the conduct of business operations." Induction to Beta Gamma Sigma is the highest honor that may be conferred by the College of Business Administration.

#### Omicron Delta Epsilon

Omicron Delta Epsilon is the international honor society in economics serving to recognize scholastic attainment and honoring outstanding achievement in economics. The society is one of the world's largest academic honor societies. The Marquette chapter was founded in 1981.

### Professional Fraternities

Students in the College of Business Administration are eligible to join the following professional fraternities on campus: Psi Chapter of Beta Alpha Psi, national accounting fraternity, and Delta Sigma Pi, the international professional commerce fraternity and Alpha Kappa Psi, a business fraternity.

### Professional Societies

#### Marquette-ing Club

The Marquette-ing Club provides opportunities to students to interact with their fellow students, academicians and the business community and to develop a career-oriented objective.

#### Information Technology Student Organization (ITSO)

The Information Technology Student Organization has a mission to heighten the awareness of information systems business applications and careers available for business systems analysts.

## **Collegiate Entrepreneurs of Marquette (CEM)**

Collegiate Entrepreneurs of Marquette is an organization of college students who promote entrepreneurship among the students, faculty, alumni and within the local community. CEM is an affiliate of Collegiate Entrepreneurs of America.

## **Marquette Economics Association (MEA)**

The Economics Association student group was established to promote the academic, professional and leadership development of its members. The organization provides a forum for the professional and social interaction of students, faculty, alumni and professionals interested in economic issues and careers in economics.

## **Financial Management Association (FMA)**

The Financial Management Association is a national association of finance specialists dedicated to developing interactions between students, the faculty, and the business community. Through a series of guest speakers, field trips, and simulation games, the organization exposes the students to as many career opportunities in finance as possible.

## **Go-Getters (GG)**

The vision of the Go-Getters is to maximize business students' career potential by bringing in speakers, sponsoring seminars and workshops, touring companies, and one-on-one counseling sessions dealing with various aspects of career management. The members are eager to identify, pursue and earn a career opportunity with their number one choice of an employer.

## **Human Resources Management Association (HRMO)**

The Human Resources Management Organization's primary aim is to assist students in improving their personal and professional managerial skills and understanding of the realities of the business environment.

## **International Business Student Association (IBSA)**

The International Business Student Association (IBSA) provides a forum for all Marquette University students to learn about international business (IB) events, developments and activities on campus and in the business community. IBSA holds information meetings, IB-leader guest-speaker series, and provides other IB related academic and professional career development and networking opportunities.

## **Multicultural Business Organization (MBO)**

The Multicultural Business Organization was established to support business students from diverse backgrounds in their pursuit of a successful academic career by raising awareness of and accessibility to resources within the university for developing and reaching their professional goals. Additionally, the MBO offers programming to enhance cross-cultural understanding of all Marquette students.

## **Operations and Supply Chain Management Association (OSCM)**

The Operations and Supply Chain Management Association is a professional organization made up of individuals who practice and preach the art and science of Operations and Supply Chain Management. Students interact with local professionals by attending dinner meetings, plant tours, technical sessions, and other related activities.

## **Real Estate Club of Marquette**

The Real Estate Club at Marquette provides the commercial real estate community with innovative effective, ethically committed applied real estate decision makers through superior learning, research and on site education. The club strives to provide each of their members with the highest level of applied experience. The organization arranges site visits to regionally developments and they create opportunities for members to network with industry leaders through mentoring and shadowing programs. Also, through the Center of Real Estate, they provide a wide range of internships to allow their members to gain firsthand experience. Club participants stay informed and connected to current industry trends and have the opportunity to become student members in organizations in the local area.

## **Women in Business (WIB)**

Women in Business (WIB) is an organization at Marquette University founded in 2007 to aid female students in building their resume, gaining leadership skills, increasing networking opportunities and taking a look into and gaining insight from the lives of professional women. Members of the organization are undergraduate female students interested in having a professional career upon graduation. Members from all majors are welcome, typically we see students from the College of Business Administration and the College of Communication. WIB typically holds monthly meetings that bring professional working women from across the Midwest to campus to discuss a variety of topics. In addition, the organization holds socials and how-to sessions regarding different aspects of attaining a job.

## Course Descriptions

### Accounting

#### **ACCO 2030. Principles of Financial Accounting. 3 cr. hrs.**

Accounting concepts and principles applied in the preparation of financial statements, asset valuation, and the accounting for debt and equity issues of business corporations. Prereq: Soph. stdng; computer literacy.

#### **ACCO 2031. Principles of Managerial Accounting. 3 cr. hrs.**

Structuring data to aid management decisions. Internal control, budgeting, break-even analysis, standard costing, variable costing, ratio analysis, inventory control, capital budgeting, and transfer pricing. Prereq: ACCO 2030; computer literacy.

#### **ACCO 3001. Intermediate Accounting. 3 cr. hrs.**

Discussion of the development of accounting standards and the conceptual framework underlying financial accounting. An in-depth review of the income statement and the balance sheet. Recognition, measurement and reporting of cash, receivables, inventories, property, plant and equipment, intangible assets, liabilities and investments. Prereq: ACCO 2031; computer literacy.

#### **ACCO 3005. Advanced Accounting for Managerial Decisions. 3 cr. hrs.**

Course is designed for students specializing in finance and other non-accounting majors who wish to study accounting above the principles level. Emphasizes topics from intermediate (3001) and advanced (4020) accounting from a managerial perspective, including: the income statement, current assets and liabilities, pensions, leases, stockholders' equity and other selected issues. Although by necessity some procedural issues are covered, the major focus is upon how financial accounting requirements can and do affect business decisions. Prereq: Jr. stdng. and ACCO 2031.

#### **ACCO 3986. Internship Work Period. 0 cr. hrs.**

SNC/UNC grade assessment. Prereq: Jr. stdng., cons. of prog. dir. and cons. of internship dir.

#### **ACCO 4000. Accounting Communications. 3 cr. hrs.**

A comprehensive examination of the major forms of communication used in the accounting profession. Instruction in business writing and speaking. Prereq: ACCO major and ACCO 3001.

#### **ACCO 4010. Individual Income Taxation. 3 cr. hrs.**

History of federal income taxation. Taxation of personal income. Determination of gross income, adjusted gross income, deductions, credits, exemptions, normal tax, and surtax. Prereq: Jr. stdng. and ACCO 3001.

#### **ACCO 4020. Advanced Accounting 1. 3 cr. hrs.**

Recognition, measurement and reporting of stockholders' equity, retained earnings and dilutive securities. An examination of financial reporting issues; earnings per share, income taxes, pensions, leases, accounting changes and errors. A further elaboration of financial statement preparation: statement of cash flows, interim reporting, segment reporting and reporting for inflation. Also, accounting for partnerships. Prereq: ACCO 3001.

#### **ACCO 4030. Cost Accounting. 3 cr. hrs.**

Industrial cost accounting systems, job order and process costing, standard costs, and variance analysis. Procedures for measuring managerial performance and enforcing budgets. Problems conveying the importance of accounting information in planning and controlling a business. Prereq: ACCO 3001.



**ACCO 4040. International Accounting. 3 cr. hrs.**

An overview of managerial and financial accounting issues faced by multinational corporations or firms involved in international business. Issues include the diversity of worldwide accounting principles and the prospects for uniform international accounting standards, foreign currency transactions and translation, inflation, various technical accounting methods and the implications of their application, financial disclosures, analysis of financial statements, auditing, investment analysis, risk management, management information systems, performance evaluation, methods of financing transfer pricing, and taxation. Prereq: ACCO 4020.

**ACCO 4045. International Taxation. 3 cr. hrs.**

U.S. Taxation of international transactions and foreign taxpayers. A study of the U.S. and foreign taxation of international commercial transactions involving U.S. and foreign taxpayers, including the taxation of income of U.S. taxpayers operating abroad through branches and subsidiaries; the U.S. foreign tax credit provisions; cross-border asset transfers and related intercompany pricing issues; the U.S. taxation of non-resident individuals, partnerships, associations and foreign corporations; and bilateral and multilateral income tax treaties. Prereq: ACCO 4010.

**ACCO 4050. Accounting Information Systems. 3 cr. hrs.**

Substantial hands-on involvement in computing capabilities which enable accountants to be more productive and to provide better service to clients and management. Applications in cost behavior, cost analysis, cost estimating, cost allocations, budgeting, profit planning, capital budgeting, and expert systems. Examination of various approaches to the computerization of transaction processing cycle, using suitable software package, with special emphasis on the problems of internal control. EDP auditing and the accountant's role in the systems development cycle. Prereq: ACCO 3001.

**ACCO 4080. Analysis of Corporate Financial Statements. 3 cr. hrs.**

Provides experience in reading, interpreting, and analyzing corporate financial statements. Specific attention is given to the evaluation methods necessary to assess a firm's short-term liquidity, long-term solvency funds flows, capital structure, return on investment, operating performance, and asset utilization. Effects of alternative accounting methods and footnote disclosures. Prereq: Sr. stdng. and ACCO major; or Sr. stdng. and FINA major.

**ACCO 4119. Tax Research. 3 cr. hrs.**

The objective of this course is to assist in the development of essential tax research skills and their application in the prevailing federal tax environment. The student will learn how to find tax authority, evaluate the efficacy of that authority, and apply the results of the research to a specific situation. Prereq: Sr. stdng. and ACCO 4010.

**ACCO 4170. Auditing. 3 cr. hrs.**

Focuses on major issues in auditing and the recent pronouncements of authoritative bodies. Specific attention is given to the profession code of conduct, legal liability, study and evaluation of the internal control structure, EDP systems, statistical sampling and reporting responsibilities for attest and non attest engagements. Prereq: ACCO 4050.

**ACCO 4931. Topics in Accounting. 3 cr. hrs.**

Prereq: ACCO 3001.

**ACCO 4953. Seminar in Accounting. 3 cr. hrs.**

Prereq: ACCO 3001.

**ACCO 4986. Accounting Internship - Grading Period. 3 cr. hrs.**

S/U grade assessment. Prereq: Jr. stdng., cons. of prog. dir. and cons. of internship dir.

**ACCO 4995. Independent Study in Accounting. 1-4 cr. hr.**

Prereq: Cons. of dept. ch.

## Business Administration

### **BUAD 1002. Computer Literacy in Business. 0 cr. hrs.**

Introduction to university computer system and resources. Online information, e-mail, Internet and World Wide Web. Word processing and spreadsheet analysis, with hands-on lab exercises and assignments. Prereq: Enrolled in Business Administration; or BUAD minor and cons. of dept. ch.; cons. of assistant dean. SNC/UNC grade assessment.

### **BUAD 1986. Applied Business Learning Experience-Work Period. 0 cr. hrs.**

SNC/UNC grade assessment; course does not fulfill requirements of any major in the College of Business Administration. Prereq: Soph. stdng., and enrolled in the College of Business Administration, cons. of progr. dir., cons. of Business Career Center, and cons. of Executive Assoc. Dean.

### **BUAD 2000. Global Applied Learning Project: Global Business Learning. 0-3 cr. hrs.**

Global Business Learning is a short-term applied global business service learning experience. Under the direction of the instructor, students work with a foreign business venture to solve a business problem. In the classroom setting, students learn about the history and culture of the country, as well as the experiences of individuals who have completed a global service project in the region. Students also have the opportunity to learn the realities of developing country business problems. Under the direction of the instructor, students help develop a business case solution for the selected project and travel to the location for implementation. Upon completion of the in-country experience, students prepare a post trip report for both the instructor and the entrepreneur and participate in a reflection retreat. Prereq: All application materials completed and cons. of instr.

### **BUAD 2005. Business Foundations. 2 cr. hrs.**

Introduces students to basic business concepts and practises with the goal of developing an understanding of the relationship between communication and the various business functions of corporations. Emphasizes the relationship between key corporate functions such as finance, marketing, sales, production, management, and information technology. Available only to students not enrolled in Business Administration. Prereq: Corporate Communications major.

### **BUAD 2986. Applied Business Learning Experience-Grading Period. 1 cr. hr.**

S/U grade assessment; course does not fulfill requirements of any major in the College of Business Administration. Prereq: Soph. stdng., and enrolled in the College of Business Administration, cons. of progr. dir., cons. of Business Career Center, and cons. of Executive Assoc. Dean.

### **BUAD 3089. Business and the Non-Profit Sector. 1-3 cr. hr.**

This course involves business service to a community non-profit organization and benefits the student by supplying direct sustained involvement with non-profit and social service organizations. Students will be expected to apply their business education, especially in their majors, to community and social issues. S/U grade assessment. Prereq: Enrolled in Business Administration and Jr. stdng; and cons. of instr.

### **BUAD 3399. Applied Business Communication. 0-3 cr. hrs.**

Students apply written and oral communication skills in discipline-based competitions. Preparation includes analysis of the domestic and global financial markets. Presentation requires real-time application of critical thinking and problem solving skills. Prereq: Jr. stdng. and cons. of dept. ch.

**BUAD 3986. Business Administration Internship - Work Period. 0 cr. hrs.**

SNC/UNC grade assessment. Prereq: Jr. stdng., cons. of prog. dir. and cons. of internship dir.

**BUAD 4931. Topics in Business Administration. 3 cr. hrs.**

Prereq: Jr. stdng.

**BUAD 4953. Seminar in Business Administration. 3 cr. hrs.**

Prereq: Jr. stdng.

**BUAD 4986. Business Administration Internship - Grading Period. 3 cr. hrs.**

S/U grade assessment. Prereq: Jr. stdng., cons. of prog. dir. and cons. of internship dir.

**BUAD 4995. Independent Study in Business Administration. 1-4 cr. hr.**

Prereq: Consent of Assistant Dean.

**Business Law****BULA 3001. Legal Environment of Business. 3 cr. hrs.**

A review of basic business law principles in the regulatory environment of government and society. Coverage includes the administrative environment, jurisdiction, litigation and arbitration remedies, torts, contracts, both commercial instruments and secured transaction under the UCC, and international law. Prereq: Jr. stdng.

**BULA 3040. The Legal and Regulatory Environment of International Business. 3 cr. hrs.**

A review of the legal environment of international business and of the structure and organization of foreign legal systems, international trade agreements, associations and regulatory agencies. The course will include a comparative analysis of the legal principles, issues, conventions, and competitive influences affecting international business activities as conducted by U.S. multinational enterprises when operating outside of the United States; and, by foreign multinational enterprises when operating within the United States. In addition, the course will review international dispute resolution mechanisms as applied by the international Court of Justice, the European Union, and various arbitral organizations. Prereq: Jr. stdng.

**BULA 4001. Business Law. 3 cr. hrs.**

A review of the principles of law related to business organizations with emphasis upon agency, partnership and corporation law principles; UCC contract concepts related to the sale of goods, and property law related to personal and real property (land use regulation), bailments, wills, trusts and estates, insurance environment and employment law. Prereq: BULA 3001.

**BULA 4931. Topics in Business Law. 3 cr. hrs.**

Prereq: BULA 3001.

**BULA 4953. Seminar in Business Law. 3 cr. hrs.**

Prereq: BULA 3001.

**BULA 4995. Independent Study in Business Law. 1-4 cr. hr.**

Prereq: Consent of department chair.

## Economics

### **ECON 1001. Introduction to Economics. 3 cr. hrs.**

An introductory survey of economic issues for non-majors with an emphasis on using economic concepts as elements of critical reasoning. Microeconomic topics include markets and the role of government in a market economy. Macroeconomic topics include the banking system, inflation and unemployment. International issues include the balance of trade and foreign exchange. Will not be counted towards the Economics major. Not available for students enrolled in the College of Business Administration.

### **ECON 2003. Principles of Microeconomics. 3 cr. hrs.**

Institutions and processes of market specialization and exchange. Supply and demand and their determinants. Pricing and production decisions of the firm under varying competitive conditions. The role of government in a modern mixed economy. Microeconomic analysis applied to selected economic problems.

### **ECON 2004. Principles of Macroeconomics. 3 cr. hrs.**

Processes and determinants of overall economic activity and growth. National income accounting, determination of aggregate income, employment, and the price level. Money and banking, government monetary and fiscal policy, and international economics. Prereq: ECON 2003.

### **ECON 3001. Applied Business Economics. 3 cr. hrs.**

The focus of this course is to explain and develop key economic principles, models, and data that are relevant to business analysis and managerial decision-making. It expands on important economic principles including demand and supply, production and cost, market structures, profit maximization and pricing strategies under varying competitive conditions. Students are expected to develop skills in the practice of using economic models, data and statistical techniques in the process of business decision-making, as well as an understanding of both the usefulness and limitations of such models, data, and techniques. Students may not take both ECON 3001 and ECON 3003 for credit. Prereq: ECON 2003 and ECON 2004 and MANA 2028 or equiv.

### **ECON 3003. Intermediate Microeconomic Analysis. 3 cr. hrs.**

A review of the tools of supply and demand analysis. A study of the market behavior of consumers and business firms and the way they interact with each other and with public policy. The application of market theory to questions of resource allocation efficiency, changing market conditions, optimal pricing and output strategies and to important social issues of the day. Prereq: ECON 2003, ECON 2004, and MATH 1400 or equiv. Students may not take both ECON 3001 and ECON 3003 for credit.

### **ECON 3004. Intermediate Macroeconomic Analysis. 3 cr. hrs.**

Determination of the levels of aggregate output, employment, and prices. Inflation and unemployment. A description of available policy variables and their impacts upon the money, bond, goods, and labor markets. International macroeconomic interrelationships. Fundamentals of the economic growth process. Prereq: ECON 2003 and ECON 2004 and MATH 1400 or equiv.

### **ECON 3986. Internship Work Period. 0 cr. hrs.**

SNC/UNC grade assessment. Prereq: Jr. standing, cons. of prog. dir. and cons. of internship dir.

### **ECON 4006. Public Policies Toward American Industry. 3 cr. hrs.**

Role of competition as an economic regulator. Bases and consequences of monopoly power. Development of statutory and administrative law affecting market processes in the U.S. Antitrust policies applied to monopoly, oligopoly, mergers and restrictive trade policies. Alternatives to anti-trust, including utility regulation and social regulation. Prereq: ECON 2003 and ECON 2004.

### **ECON 4008. Economics and Law. 3 cr. hrs.**

Relationship between the rights and obligations which the legal system confers on individuals and the allocation of resources which results from alternative assignments of legal rights. Uses and limitations of economic analysis in explaining the process by which legal rights are conferred. Prereq: ECON 2003 and ECON 2004.

**ECON 4010. Public Finance. 3 cr. hrs.**

Role of government in a market-oriented economy. Externalities, public goods and political decision-making. Analysis of major federal spending programs including social security, health care and welfare. Effects of government expenditure and tax policies on efficiency in the allocation of resources and on the distribution of income. Principles of taxation, budget deficits and the financing of public expenditures. Prereq: ECON 2003 and ECON 2004.

**ECON 4012. Urban and Regional Economics. 3 cr. hrs.**

Economic role of cities and systems of cities. Forces behind regional and urban growth. Explaining migration and employment changes. The role of quality of life in cities. Problems of central city economic decline, urban poverty, housing problems, and urban transportation. Suburbanization and urban sprawl. Prereq: ECON 2003 and ECON 2004.

**ECON 4016. Environmental and Natural Resource Economics. 3 cr. hrs.**

Economic analysis of environmental and natural resources including land, air, and water. Special emphasis on the role of human values and economic institutions in resource exploitation. Topics covered include air and water pollution, energy, ocean resources, forestry practices, mineral resources, the population problem, and agriculture. Prereq: ECON 2003 and ECON 2004.

**ECON 4020. Economics of Labor Markets. 3 cr. hrs.**

Supply and demand conditions unique to markets for services of human beings. The economics of investment and disinvestment of human capital. Topics include: determination of labor force size, geographic distribution and qualitative aspects; economic effects of institutional arrangements and labor laws; current issues. Prereq: ECON 2003 and ECON 2004.

**ECON 4040. International Economic Issues. 3 cr. hrs.**

Survey of international economics. Basis for and welfare effects of international trade, commercial policies, and economic growth. International organizations, trading regions, and trade accords. Balance of payments concepts and exchange rate theories. History and theory of international monetary systems including fixed versus flexible exchange rates. Prereq: ECON 2003 and ECON 2004. Credit not given if ECON 4044 or ECON 4046 has already been completed for credit.

**ECON 4042. International Antitrust and Competition Policy. 3 cr. hrs.**

Examines the economics of Antitrust or Competition Policy in an international context. Through readings, lectures, and class discussions it explores the economic rationale for Antitrust Policy, and examines the major topical areas that receive policy attention. Coverage includes a comparative survey of the policy approaches pursued by several major countries/economies, along with discussion of the conflicts and coordination issues that arise in a world characterized by extensive global trade. Prereq: ECON 2003 and ECON 2004.

**ECON 4044. International Currency Markets. 3 cr. hrs.**

Examination of various foreign exchange markets, including the spot, forward, futures and options markets. Risk, pricing and arbitrage procedures for cash and portfolio managers. Exchange rate management, structure of the international financial architecture, and the determination of exchange rates and the balance of payments. The role and practice of global financial intermediaries. Prereq: ECON 2003 and ECON 2004.

**ECON 4045. Comparative Economic Development. 3 cr. hrs.**

An analysis and description of institutional differences among national economies. A theoretical framework for analyzing the effects of alternative systems on social and economic behavior is developed. Theoretical models are applied to specific cases, with special emphasis on issues of growth and development in advanced variants of capitalist, post-communist and less developed economies. Prereq: ECON 2003 and ECON 2004.

**ECON 4046. International Trade. 3 cr. hrs.**

Sources, patterns, and welfare implications of international trade. Empirical investigations of traditional trade theories. Arguments for and impact of commercial policies. Trade effects of economic growth. Imperfect competition and intra-industry trade as alternatives to traditional theories and views. Prereq: ECON 2003 and ECON 2004.

**ECON 4048. The Russian Economy. 3 cr. hrs.**

Examines the development of the Russian economy, from the origin of the Muscovite state in 1462 to the present post communist state. Common elements as well as idiosyncratic peculiarities of each period are studied. Particular attention is paid to the Soviet Communist era, including examination of Lenin's New Economic Policy, Stalin's collectivization and creation of a planned economy, the Soviet experience in World War II, the gradual stagnation and decline of Soviet economic power beginning in 1965, and the end-game of Soviet communism engineered by Gorbachev from 1985 to 1991. The course concludes with a careful examination of the post communist transition and prospects for the future of Russia's economy. Prereq: ECON 2003 and ECON 2004.

**ECON 4060. Introduction to Econometrics. 3 cr. hrs.**

Designed to teach how to build an econometric model and to make forecasts using it. Models are constructed to explain phenomena that are observed frequently in business, economics and the social sciences. Linear regression analysis is employed and both single-equation and multi-equation models are investigated. Of practical value to economists, businessmen, engineers, statisticians, and other professionals for whom applied quantitative techniques are important. Prereq: ECON 2003 and ECON 2004 and MATH 1700 or equiv.; or ECON 2003 and ECON 2004 and MANA 2028 or equiv.

**ECON 4065. Introduction to Mathematical Economics. 3 cr. hrs.**

Designed to give students the quantitative background required to appreciate the use of mathematics in economic analysis. Emphasis is on developing important techniques. However, many economic applications are incorporated in order to demonstrate how standard economic models can be developed in mathematical terms. Topics include matrix algebra, differential calculus, both constrained and unconstrained optimization and comparative statistics. Prereq: ECON 2003, ECON 2004 and one of the following three options: MATH 1390 and MATH 1400; or MATH 1450 and MATH 1451; or MATH 1390 and MATH 1450.

**ECON 4070. Economics and Ethics. 3 cr. hrs.**

Examines the relationship between economics and ethics, or how moral values and ethical reasoning underlie both the science of economics and the operation of the economy. Aim of the course is to introduce students to the role of ethical reasoning in economics and economic life, and thereby help create a capacity on their part for ethical reflection and action in connection with economic policy and individual economic experience. Prereq: ECON 2003 and ECON 2004.

**ECON 4075. The Economics of Religion. 3 cr. hrs.**

Explores how the tools of modern economic analysis, theoretical and empirical, can be used to better understand issues central to religious behavior and participation. Hence, the objective is to gain a better understanding of the breadth and application of economic concepts using the markets for religion as a vehicle for analysis. Including: Why do individuals allocate time and money to religious activities? How do they determine the allocation between the two? How does religious participation affect individual attitudes toward trust, trade and immigration? Prereq: ECON 2003 and ECON 2004.

**ECON 4080. Money, Banking and Monetary Policy. 3 cr. hrs.**

Origins, nature and importance of money. Money demand and supply. Types of financial markets and their role in the economy. Banking institutions and the Federal Reserve. Role of monetary policy in business cycles and its impact on financial institutions and markets. Prereq: ECON 2003 and ECON 2004.

**ECON 4931. Topics in Economics. 3 cr. hrs.**

Prereq: Jr. stndg and ECON 2003 and ECON 2004.

**ECON 4953. Seminar in Economics. 3 cr. hrs.**

Prereq: Jr. stndg., ECON 2003, ECON 2004, and MANA 2028.

**ECON 4986. Economics Internship - Grading Period. 3 cr. hrs.**

S/U grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

**ECON 4995. Independent Study in Economics. 1-4 cr. hr.**

Prereq: Cons. of dept. ch.

**ECON 4999. Senior Thesis. 2 cr. hrs.**

With department approval. Seniors may write a thesis under direction of an adviser. Prereq: Cons. of dept. ch.

**Entrepreneurship****ENTP 1001. The Entrepreneurial Experience. 3 cr. hrs.**

An overview of entrepreneurship from the vantage point of the entrepreneurial practitioner with a strong expertise and/or interest in fields such as, but not limited to, sciences, communication and theatre arts, engineering and health sciences. Explores a variety of issues including identifying opportunities, assessing risk, innovation and problem solving, funding the startup and process identification and planning. Prereq: Soph stndg.; not available for students enrolled in the College of Business Administration. Cannot be counted toward the entrepreneurship major.

**ENTP 2000. Accounting and Finance Fundamentals for Non-Business Majors. 3 cr. hrs.**

Fundamentals of accounting and finance for non-business students including how financial decisions affect the outcome of the business. Students become familiar with business terms and procedures including what constitutes revenues, expenses, assets, liabilities and owner's equity. Students also learn the basics of financial statement analysis, cost structures including fixed, variable, breakeven analysis and overhead. Prereq: Not enrolled in the College of Business.

**ENTP 3001. Understanding Entrepreneurship. 3 cr. hrs.**

This course is designed to have students understand entrepreneurship in a meaningful way consistent with Marquette's mission and concern for the whole person. Students develop a short, preliminary business plan and reflection on their values and lifetime aspirations. Class time focuses on small group and class discussion as well as interaction with experienced entrepreneurs. Students prepare individualized projects based on the entrepreneurship interest, e.g., family business, corporate entrepreneurship. Prereq: Jr. stndg.

**ENTP 3986. Internship Work Period. 0 cr. hrs.**

SNC/UNC grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.



**ENTP 4010. New Venture Creation. 3 cr. hrs.**

This course focuses on starting and developing a new business. Topics include evaluating opportunities and testing the feasibility of creative ideas, selecting and dealing with partners; alternative methods of financing, developing the initial competitive strategy, structuring and managing the business through the early survival months, and sources of outside help. Students will prepare a business plan that can be used to launch a new initiative. Prereq: Sr. stndg.

**ENTP 4020. Consulting to Entrepreneurs. 3 cr. hrs.**

Students conduct a consulting project for an entrepreneur and provide its findings and recommendations, orally and in writing, to the client. Students develop skills in project management, advisory and consulting services, and primary research. Students also learn applied business knowledge to the project. Prereq: Sr. stndg. in business or cons. of instr.

**ENTP 4080. Entrepreneurial Finance. 3 cr. hrs.**

Focuses on the financial aspects of entrepreneurship, from the first decision as to whether or not to undertake an activity, to projecting financial needs, reviewing the trade-offs between alternative financing choices, to harvesting. Topics will include but are not limited to: bootstrapping, the role of angel investors, private placements, venture capital, banking options, commercial financing, public offers (IPOs, PIPES), factoring, franchising, and joint ventures. Prereq: FINA 3001.

**ENTP 4931. Topics in Entrepreneurship. 3 cr. hrs.**

Prereq: ENTP 3001.

**ENTP 4953. Seminar in Entrepreneurship. 3 cr. hrs.**

Prereq: ENTP 3001.

**ENTP 4986. Entrepreneurship Internship - Grading Period. 3 cr. hrs.**

S/U grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

**ENTP 4995. Independent Study in Entrepreneurship. 1-4 cr. hr.**

Prereq: Cons. of dept. ch.

## Finance

**FINA 3001. Introduction to Financial Management. 3 cr. hrs.**

Principles and methods of corporate finance, valuation, analysis and management. Evaluation of business projects (capital budgeting) using financial criteria and different financing choices (capital structure) for these projects will be reviewed. Introduction to the financial markets and both investment and financing instruments available to corporations and individuals. Emphasis placed on the framework and methodology involved in financial decision making. Prereq: Jr. stndg., ACCO 2031 and MANA 2028.

**FINA 3986. Internship Work Period. 0 cr. hrs.**

SNC/UNC grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

**FINA 4001. Advanced Financial Management. 3 cr. hrs.**

Extension of the development of the theory of financial management, including an examination of the relevant literature. Concentration will be on applications of financial management theory. Topics include working capital, capital budgeting, dividend policy issues, cost of capital, and principles of valuation. Required for finance specialization. Prereq: FINA 3001.



**FINA 4002. Commercial Real Estate Finance. 3 cr. hrs.**

Provide the student with an in-depth knowledge of real estate finance, real estate investment, and the operation of the real estate capital markets. The objective of the course is to understand the many sources and uses of capital in commercial real estate industry. The course begins with the mechanics of mortgage finance, followed by a detailed presentation of mortgage underwriting, lender ratios and discounted cash flow analysis. Prereq: FINA 3001.

**FINA 4011. Investment Analysis. 3 cr. hrs.**

Study of financial instruments such as stocks, bonds, convertibles, and options, and the markets in which they are traded. The primary concern of the course is with the decision process that evaluates the various investment opportunities. Prereq: FINA 3001.

**FINA 4020. Financial Planning. 3 cr. hrs.**

Introduction to the framework and tools for preparing personal financial plans as a career path in the financial services industry. Topics covered include major asset purchases, managing liabilities, determining insurance needs, developing investment portfolios, tax strategies, retirement plans, and estate planning. Course also covers professional ethical standards. Prereq: FINA 3001.

**FINA 4030. Bank Management. 3 cr. hrs.**

Study of banking on both an institutional and operating unit level. History, regulation and competitive environment of banking covered at institutional level. Development and application of specific tools and techniques dealing with the management of banks' deposit base and loan and securities portfolios, international banking and trust operations. Prereq: FINA 3001.

**FINA 4040. International Finance. 3 cr. hrs.**

This course looks at financial decision making in an international context. Global financial markets and foreign currency issues will be studied along with the international financing and capital investments. Prereq: FINA 3001.

**FINA 4060. Introduction to Financial Derivatives. 3 cr. hrs.**

This course will focus on the mechanics, pricing and use of financial derivatives, including futures contracts, options, swaps, collateralized securities, Treasury Bond, Eurodollar, and S&P 500 Index futures contracts will be discussed in detail. Stock options and index options also will be discussed. Important pricing models including Black-Scholes and the Binomial Option Pricing Model also will be discussed. Risk management using these instruments will be emphasized. Prereq: FINA 3001.

**FINA 4065. Fixed Income Securities. 3 cr. hrs.**

Focuses on the use of fixed income securities to fulfill investment requirements or accommodate corporate financing strategies. Coverage includes fixed income markets and the securities traded in those markets, techniques used to value fixed income securities, and derivative strategies using fixed income securities. Prereq: FINA 3001.

**FINA 4070. Investment Management, Ethics and Society. 3 cr. hrs.**

Examines the ethical and social responsible dilemmas that managers encounter in the investment management industry. Includes the professional standards for ethical behavior, corporate governance, accounting manipulation, and socially responsible investing. Prereq: FINA 3001.

**FINA 4080. Entrepreneurial Finance. 3 cr. hrs.**

Focuses on the financial aspects of entrepreneurship, from the first decision as to whether or not to undertake an activity, to projecting financial needs, reviewing the trade-offs between alternative financing choices, to harvesting. Topics will include but are not limited to: bootstrapping, the role of angel investors, private placements, venture capital, banking options, commercial financing, public offers (IPOs, PIPES), factoring, franchising, and joint ventures. Prereq: FINA 3001.

**FINA 4081. Investment Banking. 3 cr. hrs.**

Review of the common types of transactions that investment bankers work on and the different methods used to value those transactions. Some of these include IPOs, seasoned equity offerings, exchange offers, mergers, hostile tender offers, leverage buyouts, and going private transactions. Also exposes students to different methods used to value those transactions via applied projects, model building, cases, etc. Course may contain online teaching elements to supplement the in-class time. Prereq: FINA 3001.

**FINA 4082. Alternative Investments. 3 cr. hrs.**

Designed to help students understand the growing field of alternative investments. This course offers an in-depth study of the management of hedge funds and covers various alternative investments including commodities and managed futures, private equity, exchange traded funds (ETFs), real estate, and credit derivatives. Prereq: FINA 3001.

**FINA 4112. Investment Management. 3 cr. hrs.**

Extends the concepts introduced in FINA 4011. Topical coverage includes modern portfolio theory, options, futures and hedging techniques. Emphasis of course is on application of the concepts to investment strategies. Prereq: FINA 4011.

**FINA 4310. Introduction to Applied Investment Management. 3 cr. hrs.**

In this introductory course, the first of four required Applied Investment Management program classes, students will study securities law, regulatory issues, and the basic mechanics of investment research analysis. Students will learn how to access and utilize a variety of sources of corporate and securities information, including the Securities and Exchange Commission's database (EDGAR) of disclosure documents that public companies are required to file. The course is also intended to prepare students for their full time summer investment internship. Class laboratory required. Prereq: FINA 3001; FINA 4011, ACCO 3001, and ACCO 4080, which may be taken concurrently. Only open to students accepted into the AIM program.

**FINA 4320. Research and Financial Analysis. 3 cr. hrs.**

This course provides students an understanding of various portfolio objectives and policies, as well as an appreciation of different investment strategies and styles. Building on the concepts learned in FINA 4011, students will apply their understanding of key investment tools-quantitative research methods, economic relationships, and financial statement analysis. During this course students will analyze and manage an equity and fixed income portfolio. Class laboratory required. Prereq: FINA 4310; and FINA 4001, which may be taken concurrently. Only open to students accepted into the AIM program.

**FINA 4330. Valuation and Portfolio Management. 3 cr. hrs.**

This third required course in the AIM program includes the common approaches to valuing assets, the basic measurements of risk and return, and the key elements of the portfolio management process. Students will continue to manage an investment portfolio, evaluate performance, and prepare reports on the results at the end of the semester. The course will also include a professional lecture series, where investment practitioners discuss their own investment philosophies, strategies, and experiences. Class laboratory required. Prereq: FINA 4320 and FINA 4112, which may be taken concurrently. Only open to students accepted into the AIM program.

**FINA 4370. Advanced Investment Management, Ethics and Society. 3 cr. hrs.**

In the final course in the AIM program, students learn how to manage investments in a manner that is both ethical and socially responsible. Students acquire a thorough understanding of the Chartered Financial Analyst® professional standards of conduct in the application of ethics to the moral dimensions of money management. Students also are exposed to the strategies and performance of investment funds that are socially responsible. In doing so, students consider such issues as discrimination and affirmative action in the workplace, economic justice, and environmental impact, among others, in the evaluation of companies for inclusion in a socially responsible fund. Course may contain online teaching elements to supplement the in-class time. Prereq: FINA 4330, FINA 4060, and FINA 4931 (Fixed Income Securities), which may be taken concurrently. Only open to students accepted into the AIM program.

**FINA 4931. Topics in Finance. 2-3 cr. hrs.**

Prereq: FINA 3001.

**FINA 4953. Seminar in Finance. 3 cr. hrs.**

Prereq: FINA 3001.

**FINA 4986. Finance Internship - Grading Period. 3 cr. hrs.**

S/U grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

**FINA 4995. Independent Study in Finance. 1-4 cr. hr.**

Prereq: Cons. of dept. ch.

**Human Resources****HURE 3001. Management of Human Resources. 3 cr. hrs.**

Issues concerning the effective use and equitable treatment of employees. How human resource management activities are influenced by the economy, laws, unions, organizational strategies, and human behavior. The analysis of management activities such as recruitment and selection, training and development, pay and benefits, labor relations, performance assessment, discipline and due process. How these activities affect the attraction, retention, performance, and satisfaction of employees. Prereq: Jr. stndg.

**HURE 3986. Internship Work Period. 0 cr. hrs.**

SNC/UNC grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

**HURE 4003. Employment Law. 3 cr. hrs.**

Provides an overview of the major federal laws which regulate human resources management, as well as common law. Topics include: wrongful discharge, privacy, defamation, negligent hiring, Title VII, affirmative action, the Americans with Disabilities Act, ERISA, Workers' Compensation, and the Occupational Safety and Health Act. Provides human resource managers and line supervisors with a sufficient working knowledge of these laws to reduce the risk of imposing legal liability on their employers by their own actions and to minimize liability for questionable or unlawful acts of company agents through prompt and effective action. Prereq: Cons. of M.B.A. prog. dir.

**HURE 4005. Employee Benefit Systems. 3 cr. hrs.**

The course addresses the design and administration of employee benefit systems. Among the programs studied are: health and wellness programs, pension and retirement programs, and cafeteria plans. Legally mandated benefit systems are also studied. Prereq: HURE 3001.

**HURE 4010. Compensation of Human Resources. 3 cr. hrs.**

The development of pay programs that are internally consistent, externally competitive, and individually rewarding. The application of these concepts via job descriptions and job evaluations, market surveys and pay structures, and performance or seniority based pay. Administering employee benefits such as insurance and pensions. The government's impact on pay and benefits. Prereq: MANA 2028 and HURE 3001.

**HURE 4020. Labor Relations and Collective Bargaining. 3 cr. hrs.**

Examines the development, structure and process of collective bargaining as well as negotiation processes and strategies in a variety of settings. Central topics include labor law, union organization, general principles of negotiation, and labor contract negotiation in particular. The course is taught from a neutral perspective, emphasizing the rights and responsibilities of labor, management and government. Makes extensive use of bargaining exercises.

**HURE 4030. Employment of Human Resources. 3 cr. hrs.**

Issues relevant to staffing work organizations are addressed. Topics include: validation of selection procedures; criterion development; forecasting employee requirements and supply; alternative selection procedures; and equal employment opportunity regulations. Prereq: MANA 2028 and HURE 3001.

**HURE 4050. Human Resources Information Systems. 3 cr. hrs.**

Addresses the use of human resource information systems to facilitate and improve managerial decisions pertaining to human resource issues. Topics include: information systems fundamentals and modeling of human resource issues to assist decision making in such areas as HR and affirmative action planning, staffing, training and development, compensation and benefit administration. Prereq: Cons. of M.B.A. prog. dir.

**HURE 4080. Training and Development. 3 cr. hrs.**

Principles and factors that contribute to the personal growth and development of employees and the welfare of the company. Focus on training and employee development within organizations. Topics include training development and evaluation, employee development, career management, and career pathing within organizations. Prereq: HURE 3001. May be taken for graduate credit by students enrolled in Master of Science in Human Resources with appropriate additional assignments.

**HURE 4140. International Human Resources Management. 3 cr. hrs.**

Explores human resources issues that are addressed by organizations engaged in international business. Among the issues addressed are: the link between stages of international business and recommended human resources systems; determining the appropriate mix of host-country, third country and expatriate employees; managing expatriate assignments; and developing human resource management policies and procedures in a global context. In addition, employment law and protective social legislation as well as alternative labor union models found in different regions of the world will be studied. Prereq: HURE 3100.

**HURE 4931. Topics in Human Resources. 3 cr. hrs.**

Prereq: HURE 3001.

**HURE 4953. Seminar in Human Resources. 3 cr. hrs.**

Prereq: HURE 3001.

**HURE 4986. Human Resources Internship - Grading Period. 3 cr. hrs.**

S/U grade assessment. Prereq: Jr. stdng., cons. of prog. dir. and cons. of internship dir.

**HURE 4995. Independent Study in Human Resources. 1-4 cr. hr.**

Prereq: Consent of department chair.

## International Business

### **INBU 2953. Seminar for International Exchange Students. 0 cr. hrs.**

This course is required for all exchange students that are studying at Marquette University for the current semester. Students will be oriented to the college, the educational system and the business practices in the United States. Prereq: Approval of International Business Dir. SNC/UNC grade assessment.

### **INBU 3986. Internship Work Period. 0 cr. hrs.**

SNC/UNC grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

### **INBU 4141. International Business Strategy. 3 cr. hrs.**

In this course global business operations and global business decision making and strategy are integrated in a theoretically sound and practically useful manner. The focus of this discussion-based course is to explore various aspects of business entry and sustenance into the global marketplace using the "case method". In assessing their market position and strategic options, many companies face the decisions of a) going global, b) expanding globally, and/or c) competing globally. The course's cases, reading material, exercises, and projects are oriented towards addressing the critical issues surrounding the above options. Prereq: ECON 4044 or 4046, ECON 3001 or ECON 3003, MANA 3001, OSCM 3001, MARK 3001, FINA 3001.

### **INBU 4931. Topics in International Business. 3 cr. hrs.**

Prereq: Jr. stndg.

### **INBU 4951. Marquette Led Travel and Study Abroad in International Business:. 3 cr. hrs.**

Course taught in an international setting by Marquette professors and where students earn Marquette credit. Prereq: Cons. of dept. ch.; cons. of International Business Director.

### **INBU 4953. Seminar in International Business:. 3 cr. hrs.**

Prereq: Jr. stndg.

### **INBU 4986. International Business Internship - Grading Period. 3 cr. hrs.**

S/U grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

### **INBU 4995. Independent Study in International Business. 1-4 cr. hr.**

Prereq: Consent of Director of International Business Program.

## Information Technology

### **INTE 2051. Business Applications Development. 3 cr. hrs.**

Fundamentals of software program design and techniques for object, file and data manipulation. Topics include file processing concepts, structured programming, data structures, interface design, exposure to object-oriented tools and operation system design differences and efficient resources allocation. Choice of tools may include Visual BASIC and Delphi. Prereq: Jr. stndg.

### **INTE 3001. Introduction to Information Technology. 3 cr. hrs.**

This course provides future information systems users a broad overview of information systems theory, research and applications used in organizations. Topics include the impact of technology on business, groupware, systems development life cycle, database, hardware, software, telecommunications and applications in function areas. Prereq: Jr. stndg.

### **INTE 3053. Project Management. 3 cr. hrs.**

The course addresses organizational, team, and technical aspects of successful project management. Through class projects, students will learn to align project objectives with organizational strategies, plan, execute, and control a project, allocate material and people resources to project components, design and develop project documentation, estimate and control project and organizational risks, and manage cross functional and virtual teams as well as inter-organizational relationships. Prereq: Jr. stndg.

**INTE 3986. Internship Work Period. 0 cr. hrs.**

SNC/UNC grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

**INTE 4052. Data Base Management Systems. 3 cr. hrs.**

Applications of database management software to the design and implementation of business databases. File storage devices, data structures, logical data models, physical data storage schemes, and normalized design of databases. Management and administration of databases including procedures for data security, backup and recovery. Architecture of distributed data systems. Students from database design teams may serve as a business client. Use of tools such as SQL, Access, Oracle, Delphi, etc. Prereq: Jr. stndg.

**INTE 4054. Emerging Technologies. 3 cr. hrs.**

Advances in technological and market forces have changed the way applications are used have dramatically increased the demand for mobility and bandwidth. Business professionals must understand these emerging technologies to creatively leverage them for business solutions and integrate them with existing systems. This course will familiarize students with an array of leading edge technologies; help them understand their business feasibilities in financial, marketing, operations and other business functions; and examine social, economic, and ethical impact of these technologies. Topics include changes in voice and data communication infrastructures, emerging trends in database environments, storage trends, integration, and information privacy and security among others. Prereq: INTE 3001.

**INTE 4055. Web-based Applications. 3 cr. hrs.**

This course focuses on designing and developing Web-based applications using a variety of programming languages and tools. Students are exposed to Internet application development architecture. Class projects include developing business-to-consumer (B2C) and business-to-business (B2B) applications, among others. On completion of the course, student will understand the challenges, technologies, and issues in developing and deploying Web-based applications. Prereq: INTE 2051 or COSC 1010 or cons. of instr.

**INTE 4158. Systems Analysis and Design. 3 cr. hrs.**

The course provides future information technology (IT) professionals with systems theory, research, and applications for private and public organizations concerning requirements analysis and design techniques, problem finding, and problem solution. Students will develop process modeling and teamwork skills to develop a feasibility study and working prototype as deliverables to a real client based on the client's needs. The prototype will include a database, client interfaces, systems procedures, controls, and documentation. Methodologies include traditional, structured, and object-oriented analysis and design approaches. Prereq: two INTE courses from 2051, 3052, 2053, 4054, 4055.

**INTE 4931. Topics in Information Technologies. 3 cr. hrs.**

Prereq: Jr. stndg.

**INTE 4953. Seminar in Information Technology. 3 cr. hrs.**

Prereq: Jr. stndg.

**INTE 4986. Information Technology Internship - Grading Period. 3 cr. hrs.**

S/U grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

**INTE 4995. Independent Study in Information Technology. 1-4 cr. hr.**

Prereq: Consent of department chair.

## Leadership Education Develop

### **LEAD 1000. Foundations for Business Leadership. 1 cr. hr.**

This course provides undergraduate business students with an introductory overview of the major functional areas of business, including information regarding potential career options in these functional areas. In addition, students receive information regarding the expectations and standards that they must achieve in order to attain their goals in the business world. The course will also include topics ranging from developing computer literacy skills and orientation to the college and its policies. S/U grade assessment. Prereq: Enrolled in Business Administration; first semester freshman.

### **LEAD 2000. Applying Business Leadership Skills. 1 cr. hr.**

This course focuses on students developing their business skills to enter and exceed in the business community. Emphasis is placed on communication (both verbal and written, as well as presentation skills); practical application of ethics; formal and non-formal dining etiquette; interviewing (for an internship or job); and interacting with business executives in a real life situation with representatives from a student's chosen major(s). S/U grade assessment. Prereq: Enrolled in Business Administration and Soph. stndg. and LEAD 1000 or BUAD 1002.

### **LEAD 3000. Strategies for the Future and Dealing in the Business Community. 1 cr. hr.**

This course deals with the future decisions many students will make in their business careers. Students will be presented graduate opportunities available to them (MS, MBA, Law, etc.); legal considerations for all business people; interacting effectively in the business environment; transitioning between jobs; dressing for success; and additional ethical training. S/U grade assessment. Prereq: Enrolled in Business Administration and Sr. stndg. and LEAD 2000.

## Management

### **MANA 2028. Business Statistics. 3 cr. hrs.**

Introduction to statistical methods used in the analysis of business decisions. Covers descriptive statistics. Reviews the use of probability and probability distributions in business decisions. Introduction to sampling and sampling distributions, development of statistical estimation and statistical inference, including hypothesis testing and confidence intervals for means and proportions. Use of chi-square distribution in testing goodness-of-fit and contingency tables. Covers analysis of variance. Develops simple linear regression and correlation with tests of significance. Prereq: MATH 1390 or equiv. and MATH 1400 or equiv.; computer literacy.

### **MANA 3001. Behavior and Organization. 3 cr. hrs.**

Behavior of people individually and in groups. Emphasizes organization environment, communication, motivation, supervision and productivity. Develops fundamentals of organization theory, structure and administration. Prereq: Jr. stndg.

### **MANA 3002. Business and Its Environment. 3 cr. hrs.**

Overview of social, political and legal opportunities and constraints influencing business decision-making; social trends and underlying causes, including changes in population and income distribution and their business significance; patterns of change in political strength of identifiable groups on social, geographic and economic interest bases; antitrust, trade regulation and the legal system. Prereq: Jr. stndg.



**MANA 3034. Negotiations and New Ventures. 3 cr. hrs.**

This course examines the art and science of negotiations with the aim of developing student's negotiation abilities. This development will be achieved through readings, discussion, and active participation in negotiation exercises. This course is designed to complement the skills learned in other business courses. Representative negotiations to be completed in the course include salary negotiations, car and home purchases, customer contracts, vendor contracts, venture capital arrangements, and partnership agreements among others. Prereq: Jr. stndg.; Restricted to College of Business Administration students only.

**MANA 3035. Diversity in Organizations. 3 cr. hrs.**

Addresses the personal and managerial implications of diversity in organizations. The course will incorporate both a cognitive and experiential understanding of diversity and group differences. We examine demographic trends in the workforce, differentiate cultural practices and values among diverse groups, explore the concepts of social identity and privilege, and discuss strategies for dealing with discrimination and stereotyping. Prereq: Jr. stndg.

**MANA 4010. Motivation and Leadership. 3 cr. hrs.**

Central issues in motivation and leadership at work, and applying theories and concepts of organizational behavior will be addressed. Specific issues may include theories of motivation, the impact of various reward structures, employee participation programs, the management of poor performers, and approaches to leadership. These topics are addressed from both theoretical and applied perspectives. Prereq: MANA 3001.

**MANA 4040. International Management. 3 cr. hrs.**

Present and future trends in the international commercial arena. The course examines international trading trends for major sectors of the U.S. economy. This course differentiates international from domestic management. Prereq: Sr. stndg.

**MANA 4101. Strategic Management. 3 cr. hrs.**

Requires a knowledge of all functional areas. Broad involvement in management decision-making process. Integrates functional areas through analysis of actual business case histories and related readings. Class discussion and written reports. Management game used when appropriate. Prereq: Sr stndg. and ECON 3001 (or ECON 3003) and FINA 3001 and MANA 3001 and OSCM 3001 and MARK 3001; MANA 3002 is NOT a prerequisite.

**MANA 4931. Topics in Organizational Management. 3 cr. hrs.**

Prereq: Jr. stndg.

**MANA 4953. Seminar in Management. 3 cr. hrs.**

Prereq: Jr. stndg.

**MANA 4995. Independent Study in Management. 1-4 cr. hr.**

Prereq: Cons. of dept. ch.

## Marketing

**MARK 3001. Introduction to Marketing. 3 cr. hrs.**

Examines the marketing process in the operations of firms in profit and nonprofit sectors. Environmental forces including consumer characteristics, government regulation and social aspects are explored. Emphasis is given to how firms develop marketing strategies in terms of target market selection, segmentation and marketing mix variables such as product development, promotional methods, price determination and channels of distribution. Ethical aspects of marketing are also given consideration. Prereq: Jr. stndg. and ECON 2003.

**MARK 3986. Internship Work Period. 0 cr. hrs.**

SNC/UNC grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.



**MARK 4005. Sport Marketing. 3 cr. hrs.**

This course examines marketing issues specific to the sports industry. The course considers the application of basic marketing principles to a range of sports organizations, including professional and collegiate, and commercial and public, sponsors and corporations. The course will examine, but not limited to, topics of sport facilities, hospitality management, special events, licensing, merchandising, branding, and sales strategies. Includes a combination of lectures, guest speakers, assigned readings, case studies, research assignments, and special projects. Prereq: MARK 3001.

**MARK 4006. Business-to-Business Marketing. 3 cr. hrs.**

Application of marketing strategy in serving the needs of business-to-business (industrial), organizational, and governmental customers. Topics include: the characteristics of business markets, organizational buyer behavior, purchasing processes, customer relationship management and e-commerce strategies for business markets, business market segmentation, managing products for business markets, supply chain management, logistics, pricing strategies for business markets, business market communications and personal selling in business markets. Prereq: MARK 3001.

**MARK 4010. Consumer Behavior. 3 cr. hrs.**

To learn about the factors that influence consumers' purchasing decisions of services and products. Behavioral science concepts will be examined including perception, motivation, learning, self-concept, personality, attitudes and attitude change, culture, social class, reference groups and the family unit. Application of behavioral concepts (from psychology, sociology, anthropology and economics) to marketing management and marketing research problems, including diffusion of innovations (new products), brand loyalty, consumer satisfaction and consumer decision-making models. Prereq: MARK 3001.

**MARK 4020. Integrated Marketing Communications. 3 cr. hrs.**

Study of the promotional mix (advertising, sponsorship marketing, point-of-purchase communication, sales promotion, publicity, and personal selling) and other elements of the marketing mix (product/brand, price, distribution) as they speak with one voice in communication between the firm and its customers. Also, application of behavioral sciences, branding, packaging and interactive marketing to marketing communications. Social, legal, ethical and international aspects of marketing communications. Prereq: MARK 3001.

**MARK 4030. Customer Relationship Management. 3 cr. hrs.**

This course examines different Customer Relationship Management (CRM) programs and shows how to identify strengths and weaknesses associated with these programs. The course will examine, but not limited to, issues of developing an understanding how CRM can be best implemented, developing skills in identifying customer satisfaction and loyalty, organizing an effective customer loyalty program and its implementation. The course includes a combination of lectures, video presentations, guest speakers, assigned readings, case studies, and research assignments. Prereq: MARK 3001.

**MARK 4040. International Marketing. 3 cr. hrs.**

Takes theoretical, strategic, and ethical approaches to evaluate and understand organizational behaviors; economic, political, cultural and technological developments at local, regional and global levels; country market selection, market entry strategies (exporting, licensing and foreign direct investments) and marketing mix strategies (product, price, supply chain, and integrated marketing communication). Issues related to global market segmentation, targeting and positioning are also examined. Prereq: MARK 3001.

**MARK 4050. e-Marketing Strategy. 3 cr. hrs.**

Covers internet marketing and e-commerce beyond the basic notions found in the introductory marketing course. Coverage includes a variety of topics including internet marketing strategy, Web site traffic, multi-channel strategy, aspects of customer loyalty in an e-commerce framework, and the future of internet marketing and e-commerce. Prereq: MARK 3001.

**MARK 4051. Direct Marketing. 3 cr. hrs.**

Focuses on the direct marketing process of prospecting, conversion, and customer maintenance; and the four Ms of direct marketing (merchandising, media, message, and measurement). Emphasis is placed on database management, customer segmentation, customer profitability analysis, forecasting, market testing and analysis, and direct response advertising via direct mail. Prereq: MANA 2028 and MARK 3001.

**MARK 4060. Marketing Research. 3 cr. hrs.**

To provide a scientific solution to marketing problems this course focuses on qualitative techniques (e.g., focus groups) and quantitative techniques (e.g. survey) for data collection, storing of data in data sets and databases, data analysis using statistical techniques, and interpretation of results. Topics covered include: research analysis, research design, sampling analysis, data collection methods, data storage methods, univariate and bivariate statistical analysis, report writing and the integration of research and marketing management. Prereq: MARK 3001 and MANA 2028. Marketing minors may substitute PSYC 2001 or MATH 1700 for MANA 2028.

**MARK 4070. Marketing and Society. 3 cr. hrs.**

Focuses on environments external to the firm which have significant consequences on marketing practice. Evaluates how the marketing system contributes to or impedes the objectives of society. Topics discussed: Consumerism, Law, Marketing Ethics, Ecology, Marketing and Corporate Social Responsibility. Prereq: MARK 3001.

**MARK 4080. Product and Pricing Strategy. 3 cr. hrs.**

New Product development, competitive strategies and product life cycles as components of effective product management. The environment of pricing strategy and recent developments in pricing decision making as well as the psychological aspects of pricing. Prereq: MARK 3001.

**MARK 4085. Marketing Logistics and Distribution Strategy. 3 cr. hrs.**

Use of time and place utilities as variables in marketing strategy. Principles for the efficient design of wholesale and retail distribution systems. Logistics base, problems of distribution channel design and strategy considered in terms of their effectiveness in satisfying the demand of consumers. Prereq: MARK 3001.

**MARK 4094. Sales Management. 3 cr. hrs.**

Sales management is a complex and specialized business and organizational function including the oversight of the direct and personal marketing of consumer and industrial goods and services. The unique nature of sales management requires a separate examination of recruiting, selection, training, compensation, retention, and motivation of management tasks. Prereq: MARK 3001.

**MARK 4095. Retailing Management. 3 cr. hrs.**

Readings and cases in retail management. Types of retail organizations. Problems of location, buying, merchandise control, and retail promotion. The present state of retailing and a look into the future. Prereq: MARK 3001.

**MARK 4110. Marketing Management. 3 cr. hrs.**

The application of marketing variables are emphasized in terms of planning, implementation, and control of marketing activities for a firm. A major component is understanding how to develop marketing objectives, policies, programs and strategy for the firm. Experience is given in crafting marketing programs and developing marketing decisions through target market selection and formulation of marketing mix parameters of product, price, place and promotion. The case method is commonly used in the course. Prereq: Sr. stdng., MARK 3001, MARK 4060, and one other MARK course.

**MARK 4931. Topics in Marketing. 3 cr. hrs.**

Prereq: MARK 3001.

**MARK 4953. Seminar in Marketing. 3 cr. hrs.**

Prereq: MARK 3001.

**MARK 4986. Marketing Internship - Grading Period. 3 cr. hrs.**

S/U grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

**MARK 4995. Independent Study in Marketing. 1-4 cr. hr.**

Prereq: Cons. of dept. ch.

## Operations Supply Chain Mgmt

**OSCM 3001. Operations and Supply Chain Management. 3 cr. hrs.**

Examination of the operations and supply chain function in manufacturing and service firms from a managerial perspective. Core concepts and issues include planning, designing and managing operations, and the flow of materials and information from suppliers to customers. Prereq: MANA 2028.

**OSCM 3986. Internship Work Period. 0 cr. hrs.**

SNC/UNC grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

**OSCM 4010. Manufacturing Management. 3 cr. hrs.**

A focus on leading edge techniques used in developing a manufacturing strategy, inventory management, cycle time reduction, production scheduling ERP, JIT/Kanban, synchronous manufacturing, supply chain management and advanced manufacturing systems. Prereq: OSCM 3001.

**OSCM 4015. Service Management. 3 cr. hrs.**

Particular problems and issues of designing, managing and delivering services will be addressed. Issues include service challenge and breakthrough design, productivity, quality, innovation and flexibility, demand and capacity management, manpower planning, scheduling, technology management, strategy and integration. Prereq: OSCM 3001.

**OSCM 4020. Quality and Process Management. 3 cr. hrs.**

A foundation to quality philosophies, principles, techniques and tools is provided. The interrelationship of each is highlighted through addressing customer focus, value and satisfaction; leadership and organizational change; process design, measurement and improvement; and bench marking. Application of decision making, planning and measurement tools will occur. Prereq: OSCM 3001.

**OSCM 4030. Supply Chain Strategy and Practice. 3 cr. hrs.**

Managing logistics activities with emphasis on transportation, global sourcing, and international facility location. Issues related to the strategic and operational role of purchasing in a global supply chain management are also examined in depth. Prereq: OSCM 3001.

**OSCM 4040. Globalization and Global Supply Chain. 3 cr. hrs.**

Globalization and global operations are universally recognized as extremely important phenomena in the world of business at the juncture in time, the beginning of the 21st century. In particular, emerging economies represent both a serious competitive threat as well as an enormous business opportunity. Exposes business students to the scale and scope of globalization and global operations. The course uses the standard lecture format to present the theoretical aspects of global operations and journalistic books, articles, and business cases to discuss and analyze globalization in emerging economies with particular emphasis on China and India.

**OSCM 4060. Decision Modeling in Operations and Supply Chain Management. 3 cr. hrs.**

Introduction to spreadsheet-based decision modeling in operations and supply chain management, primarily using Microsoft Excel. Students are exposed to relevant decision models widely applied in industry. The focus is on relevance and application rather than theory. Topics include network and transportation models, linear programs, decision trees, and simulation. Prereq: MANA 2028 and OSCM 3001.

**OSCM 4931. Topics in Operations and Supply Chain Management. 3 cr. hrs.**

Prereq: OSCM 3001.

**OSCM 4953. Seminar in Operations and Supply Chain Management. 3 cr. hrs.**

Prereq: OSCM 3001.

**OSCM 4986. Operations and Supply Chain Management Internship - Grading Period. 3 cr. hrs.**

S/U grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

**OSCM 4995. Independent Study in Operational Supply Chain Management. 1-4 cr. hr.**

Prereq: Consent of department Chair.

**Real Estate****REAL 3001. Principles of Commercial Real Estate Development. 3 cr. hrs.**

Provides the student with an introductory knowledge of the real estate development process. The course focuses on the physical and analytical tools necessary in the real estate development process including: finding the development opportunity, land acquisition/site analysis, building design and public approvals, legal, market analysis, project management, construction, leasing, and financing. Throughout the course a simple real estate development feasibility process is followed to assess the viability of a development at different stages of the development process. Prereq: ACCO 2031 and ECON 2004.

**REAL 3986. Internship Work Period. 0 cr. hrs.**

SNC/UNC grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

**REAL 4002. Commercial Real Estate Finance. 3 cr. hrs.**

Provides the student with an in-depth knowledge of real estate finance, real estate investment, and the operation of the real estate capital markets. The objective of the course is to understand the many sources and uses of capital in the commercial real estate industry. The course begins with the mechanics of mortgage finance, followed by a detailed presentation of mortgage underwriting, lender ratios, and discounted cash flow analysis. Prereq: FINA 3001.

**REAL 4110. Commercial Real Estate Valuation. 3 cr. hrs.**

This course uses the "three approaches" to value process to estimate the fair market value a commercial building in the Milwaukee metropolitan area. The primary focus of this course is on an applied market analysis and the lease-by-lease modeling of tenant income for a commercial property as part of the income approach to value. The sales comparison and cost approaches to value are included in the course and are part of a narrative appraisal. Prereq: Completion or concurrent enrollment in both REAL 3001 and REAL 4002.

**REAL 4120. Cases in Commercial Real Estate. 3 cr. hrs.**

Focuses on the applied analysis of commercial real estate. The emphasis of the course is on the analysis of real estate for purchase, development, or financing across the major real estate investment sub-areas (apartments, office, retail, and warehouse/distribution). The objective of the course is to take conceptual real estate knowledge and apply it to Harvard Business School and Milwaukee Area cases. Knowledge from the many required finance, marketing, real estate, accounting, and other business and economics courses is used in analyzing the cases in this course. Prereq: Completion or concurrent enrollment in both REAL 3001 and REAL 4002.

**REAL 4931. Topics in Real Estate. 3 cr. hrs.**

Prereq: REAL 3001.

**REAL 4953. Seminar in Real Estate. 3 cr. hrs.**

Prereq: REAL 3001.

**REAL 4986. Real Estate Internship - Grading Period. 3 cr. hrs.**

S/U grade assessment. Prereq: Jr. stdng., cons. of prog. dir. and cons. of internship dir.

**REAL 4995. Independent Study in Real Estate:. 1-4 cr. hr.**

Prereq: Cons. of dept. ch.

## J. William and Mary Diederich College of Communication

### From the Dean

Diederich College of Communication website (<http://diederich.marquette.edu/>)

Welcome!

Students in the J. William and Mary Diederich College of Communication study and practice in this exciting and creative discipline during an amazing time of innovation and revolutionary change in the communication field. Our academic programs offer students the opportunity to integrate theory with emerging new communication practice and to develop critical thinking skills along the way. With our award-winning faculty, our state-of-the art technology in emerging and multiplatform media, our location in the media and creative center of Milwaukee, we are an exceptional place to study this exciting discipline.

We offer many ways for students to gain knowledge and skills across a broad spectrum of communication interests – everything from creating a documentary film to developing the strategic vision for a corporate marketing department, from investigating social issues as a reporter for an online news site to designing the sets for a main stage theatrical production. With degree programs in seven areas – Advertising, Broadcast & Electronic Communication, Communication Studies, Corporate Communication, Journalism, Public Relations or Theatre Arts – you'll find challenging courses taught by exceptional faculty, tremendous opportunities for hands-on skills building in student media, professional internships, study abroad, clubs and other student activities.

What sets us apart from other communication programs? We are the only one of 28 Jesuit universities in the country to be accredited by the Accrediting Council on Education in Journalism and Mass Communication. We've been providing journalism education at Marquette for over 100 years. Our programs in theatre and performing arts are now accredited by the National Association of Schools of Theatre. And the \$28 million endowment from the Diederich family in 2005 has brought national distinction to our college, making it possible for us to provide the most current instruction and technology in our classrooms, to bring world-renowned speakers and professionals to meet one-on-one with students, to invite guest directors for theatre productions, to welcome communication scholars to discuss their research, and to support our students in truly transformational experiences.

Our college stresses the integration of theory and practice, and our academic programs provide students with knowledge about human behavior, faith and culture. A degree from the College of Communication prepares students who envision themselves in careers where they can use their communication skills to make a difference and change the world.

Lori Bergen, Ph.D.

Dean, Diederich College of Communication

## Degrees Offered

### Degrees Offered

Marquette University confers the degree of bachelor of arts on those students who have satisfactorily completed one or more of the following majors: advertising, broadcast and electronic communication, communication studies, corporate communication, journalism, public relations and theatre arts. Students enrolled in the Honors Program who successfully complete that program may receive an honors bachelor of arts degree.

The Diederich College of Communication offers programs leading to the master of arts degree. Students may choose to focus their program in advertising and public relations; communication studies; journalism; mass communication; or science, health and environmental communication. The college also offers certificate programs in digital storytelling and professional communication. For information regarding the master's degree or the certificate, see the Graduate Bulletin.

## Admission Requirements

### Admission Requirements

**Freshman Admission:** Freshmen applicants to the Diederich College of Communication are expected to fulfill the admission requirements listed in the university section of this bulletin.

**Transfer Admission (Advanced Standing):** Applicants who have been enrolled or registered in an institution of higher learning since high school graduation, including Marquette University, need a minimum average of a 2.500 (based on a four-point system) in previous college work for consideration. Students wishing to major in advertising or public relations need a 3.000 in their previous college work to be considered for admission. An applicant's entire academic performance will be evaluated in making an admission decision.



# Academic Regulations

## Academic Dishonesty

The college adheres to the university policy on academic dishonesty found in the university section of this bulletin. Ethical behavior is essential to any communication professional and it is expected of students in the Diederich College of Communication. Cheating, plagiarism, unapproved collaboration or falsifying work in whole or in part are infractions that can result in a failing grade for an assignment and/or a course or even dismissal from the college.

## Academic Regulations

Students in the Diederich College of Communication are expected to comply with the academic requirements and regulations listed in the university section of this bulletin and must fulfill the graduation requirements stated in the bulletin issued the year they entered Marquette. Students who have not enrolled for one or more years must normally follow the requirements in effect at the time of their return. (Exceptions are made for students who interrupted their enrollment to serve in the Armed Forces).

## Advisers

Each student in the college is assigned a faculty adviser with whom the student should confer at least once each term. Among other duties, the faculty advisers assist students in planning and accomplishing their programs of study. However, it is wholly each student's responsibility to know and fulfill the requirements for graduation specified for his or her selected program.

## Attendance

Because absence from class will prevent a student from getting the full benefit of a course and because in many courses, each student's involvement contributes to the learning process for all other students in the class, the college has adopted the University Attendance Policy (p. 62) for all of its undergraduate courses.

## Background Checks, Drug Testing

Some degrees, majors and/or courses may require a student to submit to a criminal background check and/or drug testing. The results of those checks and/or tests may affect the student's eligibility to continue in that degree, major and/or course.

## CD and D Grades

Grades of CD in courses offered by the Diederich College of Communication will be accepted toward majors and/or minors offered by the college provided the student receiving the CD grade has a minimum grade point average of 2.000 in the major or minor. Grades of D generally do not fulfill the credit hour requirement for a major or minor in the Deiderich College. Students having received a grade of D in a Diederich College of Communication course, should contact the department chair who will determine whether or not the course can be accepted or suggest that the course be repeated or

replaced by a substitute course. If a student receives a grade of CD or D in a major or minor course offered by another college on campus, that department chair must be consulted. Credit is given only once for repeated courses.

## **Professional Standards**

All written work and oral presentations produced by students in all classes under the jurisdiction of the Diederich College of Communication are expected to conform to professional standards of lucidity, coherence, grammar, spelling and punctuation. All instructors in all classes under the jurisdiction of the college will consider the factors listed above, as well as substance, in grading written and oral presentations.

## **Transfer Credit Policy**

Students planning to take course work at other institutions should obtain college approval before enrolling. Approval will be based on a review of course descriptions in the current bulletin of the college or university at which the courses will be taken. The student should present a bulletin or website address with such information at the time approval is sought. If prior approval is not obtained, there is no guarantee that credits earned will be accepted by Marquette University. Approval forms may be obtained at the college records office.

In accordance with the University Transfer Credit Policy, the Diederich College of Communication will grant credit for courses taken for a grade and completed at a C or better. Only credits will transfer, not grades. Courses completed in a quarter-hour system will be converted to semester credits, therefore reducing the total credits accepted by one-third. A Marquette equivalent will be specified for each transferable course. Some transferable courses, for which there is no discernible Marquette equivalent, will be awarded credit using "generic" numbers such as 9290-9299 and 9390-9399. These credits will count toward the degree and may fulfill college core, major or minor requirements. However, they will not fulfill any requirement where a specific course number (i.e. PHIL 1001 Philosophy of Human Nature or THEO 1001 Introduction to Theology) has been indicated. Contact the director of student records with any questions or concerns regarding transfer credits.

## **Required to Withdraw for Academic Reasons**

Students admitted to the Diederich College of Communication are expected to meet college academic standards. Academic performance is monitored carefully by the college, and students who fail to maintain steady progress or demonstrate adequate achievement will be required to withdraw from the college.

The bases for review are grade point deficiency, inadequate progress, grades of WA or UW, and the violation of special conditions. Special conditions may be prescribed in writing at the time of the student's admission, readmission or transfer into the college. Conditions may also be prescribed in writing in the case of a student whose course performance or failure to follow academic advice warrants such action. Registration is interpreted as the student's agreement to the specified conditions. All students to whom conditions have been specified will be subject to review and academic dismissal should they fail to fulfill the terms specified.

A student can be dismissed for academic reasons even though the student's cumulative GPA exceeds 2.000. Students concerned about their academic progress should consult the college office. Students required to withdraw for academic reasons will be notified by e-mail and letter of the college's decision and of the appeal process.

## **Accreditation**

The college's academic areas of advertising and public relations, broadcast and electronic communication and journalism have been accredited by the Accrediting Council on Education in Journalism and Mass Communication.

## Graduation Requirements

### Amount and Quality of Work

Candidates for a degree must earn a minimum of 128 credit hours. Candidates must also earn a minimum number of quality points equal to twice the number of credit hours attempted at Marquette (2.000 grade point average). Lower-division courses are numbered 1000 to 2999; upper-division courses are numbered 3000 to 4999. Thirty-two hours of credit in upper-division courses must be earned by candidates for a degree. Students majoring in advertising, broadcast and electronic communication, journalism and public relations may not exceed 48 credits in any combination of those courses and are required to take 80 credits outside of mass communication with at least 65 of the 80 credits in the liberal arts. A student taking more than 48 credits in those areas will have to add a similar number of credits beyond the 128 needed to graduate.

Students may be required to submit a portfolio or take part in some other non-credit activity to satisfy Diederich College of Communication or departmental assessment requirements.

Applications for graduation are to be submitted to the college records office by the last day of advising week in the term prior to the term of graduation (November for May and August graduates; March for December graduates).

It is the responsibility of students to know and fulfill all university and college requirements.

### General Degree Requirements

Candidates for the baccalaureate degree must complete a minimum of 128 credit hours including the following requirements:

| Area  | Credit Hours |
|---|--------------|
| University Core of Common Studies             | 36           |
| Diederich College of Communication Curriculum | 21-23        |
| Communication                                 | 15           |
| Foreign Language/Diverse Culture              | 6-8          |
| Major   | 33-41        |
| Minor (or Second Major)                       | 18-24        |

### University Core of Common Studies (UCCS)

See the University Core of Common Studies section of this bulletin.

#### Examining the World:

- 6 credits Rhetoric (R)
- 3 credits Mathematical Reasoning (MR)

**Engaging the World:**

- 3 credits Diverse Cultures (DC)
- 3 credits Histories of Cultures and Societies (HCS)
- 3 credits Individual and Social Behavior (ISB)
- 3 credits Literature/Performing Arts (LPA)
- 3 credits Science and Nature (SN)

**Evaluating the World:**

- 6 credits Human Nature and Ethics (HNE)
- 6 credits Theology (T)

**Note:** Please consult the Core of Common Studies website ([http://www.marquette.edu/explore/coc\\_studies.shtml](http://www.marquette.edu/explore/coc_studies.shtml)) for an updated list of approved core courses.

**Diederich College of Communication Curriculum**

The Diederich College of Communication builds on the foundational educational experience provided by Marquette's Core of Common Studies. It does this through a college curriculum that amplifies and deepens the knowledge, skills and values imparted to students in the nine knowledge areas of the Common Core, and by offering students the opportunity to develop specialized knowledge and skills in a variety of undergraduate majors and minors. The Diederich College of Communication thereby extends the student's core of common studies experiences, and focuses further learning in pursuit of a specialized degree. College of Communication students are required to take the following courses:

|  |  |       |
|--|--|-------|
| CMST 1000  | Introduction to Communication                  | 3     |
| COMM 1100  | Contemporary Presentation                      | 3     |
| COMM 1200  | Media in Society                               | 3     |
| COMM 2100  | Introduction to Visual Communication           | 3     |
| COMM 2500  | Introduction to Communication Research Methods | 3     |
| 6-8 credit hours in Foreign Language or Diverse Cultures |  | 6-8   |
| Total Credit Hours                                       |  | 21-23 |

**Communication Requirement**

College of Communication students are required to take the following courses:

|           |                               |   |
|-----------|-------------------------------|---|
| CMST 1000 | Introduction to Communication | 3 |
| COMM 1100 | Contemporary Presentation     | 3 |
| COMM 1200 | Media in Society              | 3 |

|                    |  |    |
|--------------------|--|----|
| COMM 2100          | Introduction to Visual Communication           | 3  |
| COMM 2500          | Introduction to Communication Research Methods | 3  |
| Total Credit Hours |  | 15 |

**Note:** COMM 2100 Introduction to Visual Communication cannot also be used to fulfill the University Core of Common Studies Literature and Performing Arts requirement.

## Foreign Language/Diverse Cultures Requirement

Students must complete either two semesters of foreign language or two UCCS approved Diverse Cultures courses. These courses cannot also be used to fulfill any UCCS requirements. Students who have never studied a foreign language or who wish to pursue a new language must take levels 1001 and 1002 to complete this requirement. Students who wish to continue studying the same language begun in high school must complete the Foreign Language Placement Exam. On the basis of this exam, students will be placed in the appropriate language course. For further details on the placement exam in French, German and Spanish see the university section on Placement in Foreign Languages or visit the Department of Foreign Languages and Literatures website (<http://www.marquette.edu/fola/>).

## Minor Requirement

Communication students must complete a minor or a second major. More information regarding minors is contained in the curricula information section of this bulletin.

## Major

See the individual list of majors following this section. Some majors may require specific courses to fulfill the University Core of Common Studies or the college's curriculum.

# Majors and Minors

## Majors

The Diederich College of Communication offers majors in advertising, broadcast and electronic communication, communication studies, corporate communication, journalism, public relations and theatre arts. Students interested in broadcast journalism should select journalism as a major. Students majoring in advertising, broadcast and electronic communication, journalism and public relations cannot take more than 48 credits in these areas and are required to take 80 credits outside of the mass communication areas with at least 65 credits in the liberal arts. No more than 15 credits used to fulfill one major can be used to complete another. Students who major in one mass communication area (advertising, broadcast and electronic communication, journalism or public relations) cannot select another major or minor in a second mass communication area. Students majoring in corporate communication cannot select a double major or minor in either communication studies or public relations. Specific major requirements and typical four-year programs are listed at the end of this section.

Students for whom particular interests may be better served by a flexible grouping of courses from several areas can pursue an interdisciplinary major. Such students should consult a faculty adviser in their area. With this adviser, the student will write a proposal explaining the relationship between educational objectives and the choice of an interdisciplinary major, a listing of courses to be included and the sequence in which they will be taken. The proposal, as well as any subsequent modifications, is subject to the approval of the Diederich College of Communication undergraduate curriculum committee and the associate dean.

**Students with interdisciplinary interest in electronic communication may pursue a flexible program of study through an interdisciplinary major in electronic communication studies. Such students should consult the chairperson in broadcasting and electronic communication who will refer them to a faculty adviser in their area of interest.**

Students who have not chosen their major at the time of admission to the college should do so no later than the second term of the sophomore year. Students who enter the Diederich College of Communication as first semester freshman may change majors during the freshman and sophomore year regardless of grade point average. However, after the second semester of the sophomore year, students wishing to declare a major in Advertising or Public Relations will need a 3.000 grade point average. Students transferring into the Diederich College of Communication may change majors, however, they will need a 3.000 grade point average to declare a major in Advertising or Public Relations at any time. Students outside the Diederich College of Communication may declare a major in Advertising or Public Relations only with a 3.000 or higher grade point average. Advisers are assigned to students based on the major. Students can declare their major in the college records Office.

## Minors

Students in the Diederich College of Communication are required to complete a minor or second major. Minors are offered by most disciplines in the Klingler College of Arts and Sciences and the requirements are listed in the College of Arts and Sciences section of this bulletin. The College of Business Administration offers minors in marketing, human resources and business administration. See the College of Business Administration section of this bulletin for these requirements.

Students can also complete an interdisciplinary minor composed of a minimum of 18 hours of course work complementary to the major. Courses which comprise the interdisciplinary minor are selected by the student, approved by the adviser and subject to the approval of the Diederich College of Communication undergraduate curriculum committee and the associate dean.

Minors in dance, film, fine arts, music and theatre arts are available to any Marquette University student. Students majoring in advertising, broadcast and electronic communication, journalism or public

relations cannot minor in any of these mass communication majors. Students majoring in corporate communication cannot minor in communication studies or public relations. No more than 9 credits used to fulfill one minor can be used to complete another minor.



# Advertising and Public Relations

## Advertising Major

The major in advertising is designed to give students the knowledge and skills to be an effective marketing communicator. The program integrates content from both advertising and public relations to give majors maximum flexibility in the types of careers that can be pursued after graduation. Such opportunities exist in advertising agencies, corporate advertising departments, graphic design firms and media sales. Internships allow students to take advantage of the thriving local advertising community.

**Requirements for a Major:** A total of 36 credits of course work must be completed for the major in advertising. Students with a major in advertising cannot take more than 48 credits in the mass communication areas (ADPR, BREC, COMM and JOUR) and are required to take 80 credits outside of mass communication areas with at least 65 credits in the liberal arts. The following courses must be completed toward the 36 credits:

### Required Courses

|   |  |   |
|---|--|---|
| ADPR 1400                                   | Advertising Principles   | 3 |
| ADPR 2100                                   | Digital Communication Design   | 3 |
| ADPR 2200                                   | Media Writing  | 3 |
| ADPR 2400                                   | Strategic Research and Planning for Advertising and Public Relations | 3 |
| ADPR 3400                                   | Advertising Copywriting  | 3 |
| ADPR 3986                                   | Internship in Advertising and Public Relations                       | 3 |
| ADPR 4100                                   | Advertising Media Planning   | 3 |
| ADVE 4997                                   | Advertising Campaigns  | 3 |
| COMM 3800                                   | Media Law  | 3 |
| COMM 3900                                   | Ethical Problems of Mass Communications                              | 3 |
| Plus two courses from any of the following: |  | 6 |
| ADPR 1800                                   | Public Relations Principles  |   |
| ADPR 3200                                   | Marketing Communications Design and Production                       |   |
| ADPR 3600                                   | Public Relations Writing   |   |
| ADPR 3800                                   | Public Relations Strategies  |   |
| ADPR 4000                                   | Sports Promotion   |   |
| ADPR 4200                                   | Business to Business Marketing Communication                         |   |
| ADPR 4300                                   | Emerging and Social Media in a Dynamic Marketplace                   |   |
| ADPR 4400                                   | Advanced Advertising Copywriting                                     |   |
| ADPR 4500                                   | Advertising and Public Relations Account Management                  |   |

|                    |  |    |
|--------------------|--|----|
| ADPR 4600          | Multicultural and International Advertising and Public Relations |    |
| ADPR 4700          | Cultural Identity, Media and World Religions                     |    |
| ADPR 4800          | Advanced Public Relations Writing                                |    |
| ADPR 4951          | MU Led Travel/Study Abroad                                       |    |
| ADPR 4953          | Seminar in Advertising and Public Relations                      |    |
| ADPR 4961          | Special Institute/Workshop/Project                               |    |
| ADPR 4995          | Independent Study in Advertising and Public Relations            |    |
| BREC 2205          | Production Techniques  |    |
| BREC 2250          | Video Production   |    |
| BREC 2335          | Script and Continuity  |    |
| BREC 2555          | Corporate Media  |    |
| BREC 2565          | The Business of Entertainment                                    |    |
| BREC 2710          | Sound Design   |    |
| BREC 3510          | Broadcast Sales and Promotion                                    |    |
| CMST 3410          | Intercultural Communication                                      |    |
| CMST 4260          | New Communication Technologies in the Workplace                  |    |
| CMST 4270          | Communicating in Multinational Organizations                     |    |
| CMST 4400          | Cross-Cultural Communication in the United States                |    |
| CCOM 2000          | Issues in Corporate Communication                                |    |
| CCOM 3750          | Corporate Rhetoric   |    |
| JOUR 1200          | Basic Photography  |    |
| THAR 1100          | Acting 1: Fundamental Technique                                  |    |
| ENTP 3001          | Understanding Entrepreneurship                                   |    |
| PSYC 3201          | Introductory Social Psychology                                   |    |
| Total Credit Hours |  | 36 |

The following courses are also required but do not count as hours in the major:

|           |                              |   |
|-----------|------------------------------|---|
| CMST 3300 | Persuasion                   | 3 |
| ECON 2003 | Principles of Microeconomics | 3 |
| MARK 3001 | Introduction to Marketing    | 3 |
| PSYC 1001 | General Psychology           | 3 |

And one of the following:

3

|                    |   |    |
|--------------------|---|----|
| MATH 1700          | Modern Elementary Statistics              |    |
| PSYC 2001          | Psychological Measurements and Statistics |    |
| MANA 2028          | Business Statistics                       |    |
| Total Credit Hours |   | 15 |

## Typical Program for Advertising Majors

| Freshman                              |       |                                       |       |
|---------------------------------------|-------|---------------------------------------|-------|
| First Term                            | Hours | Second Term                           | Hours |
| CMST 1000                             | 3     | COMM 1200                             | 3     |
| ENGL 1001 (UCCS (R))                  | 3     | COMM 1100 (UCCS (R))                  | 3     |
| UCCS (HCS)                            | 3     | ADPR 1400                             | 3     |
| Foreign Language or UCCS (DC)         | 3-4   | Foreign Language or UCCS (DC)         | 3     |
| THEO 1001 (UCCS)                      | 3     | PHIL 1001 (UCCS (HNE))                | 3     |
|                                       | 15-16 |                                       | 15    |
| Sophomore                             |       |                                       |       |
| First Term                            | Hours | Second Term                           | Hours |
| ADPR 2100 or CMST 3300                | 3     | ADPR 2100 or CMST 3300                | 3     |
| ADPR 2200                             | 3     | COMM 2100 (or UCCS (DC)) <sup>*</sup> | 3     |
| COMM 2100 (or UCCS (DC)) <sup>*</sup> | 3     | COMM 2500                             | 3     |
| MATH 1700 (UCCS (MR) or (SN))         | 3     | ECON 2003                             | 3     |
| PSYC 1001 (UCCS (ISB), or elective)   | 3     | MATH 1700 (UCCS (MR) or (SN))         | 3     |
| UCCS (LPA)                            | 3     |                                       |       |
|                                       | 18    |                                       | 15    |
| Junior                                |       |                                       |       |
| First Term                            | Hours | Second Term                           | Hours |
| MARK 3001                             | 3     | ADPR 3986                             | 3     |
| PHIL 2310 (UCCS)                      | 3     | COMM 3900                             | 3     |
| ADPR 2400                             | 3     | Minor/elective courses                | 11    |
| ADPR 3400                             | 3     |                                       |       |

|                             |              |                       |              |
|-----------------------------|--------------|-----------------------|--------------|
| Major elective              | 3            |                       |              |
|                             | 15           |                       | 17           |
| <b>Senior</b>               |              |                       |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>    | <b>Hours</b> |
| UCCS Theology course        | 3            | ADVE 4997             | 3            |
| ADPR 4100                   | 3            | Major/minor electives | 12           |
| COMM 3800                   | 3            |                       |              |
| Major elective              | 3            |                       |              |
| Minor/elective courses      | 6            |                       |              |
|                             | 18           |                       | 15           |
| Total credit hours: 128-129 |              |                       |              |

\* COMM 2100 Introduction to Visual Communication cannot be used to fulfill the UCCS Literature/Performing Arts requirement.

## Advertising Minor

### Required Courses

|                        |  |    |
|------------------------|--|----|
| ADPR 1400              | Advertising Principles   | 3  |
| ADPR 2200              | Media Writing  | 3  |
| and four courses from: |  | 12 |
| ADPR 2400              | Strategic Research and Planning for Advertising and Public Relations |    |
| ADPR 3200              | Marketing Communications Design and Production                       |    |
| ADPR 3400              | Advertising Copywriting  |    |
| ADPR 4100              | Advertising Media Planning   |    |
| ADPR 4200              | Business to Business Marketing Communication                         |    |
| ADPR 4300              | Emerging and Social Media in a Dynamic Marketplace                   |    |
| ADPR 4400              | Advanced Advertising Copywriting                                     |    |
| ADPR 4500              | Advertising and Public Relations Account Management                  |    |
| ADPR 4600              | Multicultural and International Advertising and Public Relations     |    |
| ADPR 4700              | Cultural Identity, Media and World Religions                         |    |

|                    |   |
|--------------------|---|
| ADPR 4953          | Seminar in Advertising and Public Relations |
| ADVE 4997          | Advertising Campaigns                       |
| <hr/>              |   |
| Total Credit Hours | 18  |

## Public Relations Major

The major in public relations is designed to give students the knowledge and skills to be an effective marketing communicator. The program integrates content from both public relations and advertising to give majors maximum flexibility in the types of careers that can be pursued after graduation. Such opportunities exist in public relations agencies, corporate communication departments, government and nonprofit organizations. Internships are emphasized, taking advantage of the numerous public relations needs of local organizations.

**Requirements for a Major:** A total of 39 credits of course work must be completed for the major in public relations. Students with a major in public relations cannot take more than 48 credits in the mass communication areas (ADPR, BREC, COMM and JOUR) and are required to take 80 credits outside of the mass communication areas with at least 65 credits in the liberal arts. The following courses must be completed toward the 39 credits:

### Required Courses

|   |  |   |
|---|--|---|
| ADPR 1800   | Public Relations Principles  | 3 |
| ADPR 2200   | Media Writing  | 3 |
| ADPR 3200   | Marketing Communications Design and Production                       | 3 |
| ADPR 3600   | Public Relations Writing   | 3 |
| ADPR 3800   | Public Relations Strategies  | 3 |
| ADPR 3986   | Internship in Advertising and Public Relations                       | 3 |
| CMST 3300   | Persuasion   | 3 |
| COMM 3800   | Media Law  | 3 |
| or CMST 4330  | Freedom of Speech  |   |
| COMM 3900   | Ethical Problems of Mass Communications                              | 3 |
| PURE 4997   | Public Relations Campaigns   | 3 |
| Plus three courses from any of the following courses: |  | 9 |
| ADPR 1400   | Advertising Principles   |   |
| ADPR 2100   | Digital Communication Design   |   |
| ADPR 2400   | Strategic Research and Planning for Advertising and Public Relations |   |
| ADPR 4000   | Sports Promotion   |   |

|           |  |
|-----------|--|
| ADPR 4200 | Business to Business Marketing Communication                     |
| ADPR 4300 | Emerging and Social Media in a Dynamic Marketplace               |
| ADPR 4600 | Multicultural and International Advertising and Public Relations |
| ADPR 4700 | Cultural Identity, Media and World Religions                     |
| ADPR 4800 | Advanced Public Relations Writing                                |
| ADPR 4953 | Seminar in Advertising and Public Relations                      |
| CMST 3100 | Communication and Conflict                                       |
| CMST 3200 | Organizational Communication                                     |
| CMST 4260 | New Communication Technologies in the Workplace                  |
| CMST 4400 | Cross-Cultural Communication in the United States                |
| CMST 4500 | Health Communication   |
| CCOM 2000 | Issues in Corporate Communication                                |
| CCOM 3750 | Corporate Rhetoric   |

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Total Credit Hours 39

## Typical Program for Public Relations Majors

| Freshman                      |       |                               |       |
|-------------------------------|-------|-------------------------------|-------|
| First Term                    | Hours | Second Term                   | Hours |
| CMST 1000                     | 3     | COMM 1200                     | 3     |
| ENGL 1001 (UCCS (R))          | 3     | COMM 1100 (UCCS (R))          | 3     |
| UCCS (HCS)                    | 3     | ADPR 1800                     | 3     |
| Foreign Language or UCCS (DC) | 3-4   | Foreign Language or UCCS (DC) | 3-4   |
| THEO 1001                     | 3     | PHIL 1000 (UCCS (HNE))        | 3     |
|                               | 15-16 |                               | 15-16 |
| Sophomore                     |       |                               |       |
| First Term                    | Hours | Second Term                   | Hours |
| ADPR 2200                     | 3     | COMM 2100 (or UCCS (DC))*     | 3     |
| COMM 2100 (or UCCS (DC))*     | 3     | COMM 2500                     | 3     |
| PHIL 2310 (UCCS (HNE))        | 3     | UCCS (LPA)                    | 3     |
| UCCS (ISB)                    | 3     | UCCS (MR) or (SN)             | 3     |
| UCCS (MR) or (SN)             | 3     | UCCS (T)                      | 3     |

|                             |              |                        |              |
|-----------------------------|--------------|------------------------|--------------|
| Minor/electives             | 3            | Major elective         | 3            |
|                             | 18           |                        | 18           |
| <b>Junior</b>               |              |                        |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |
| ADPR 3600                   | 3            | ADPR 3200              | 3            |
| ADPR 3800 or 3986           | 3            | ADPR 3800 or 3986      | 3            |
| ADPR 3200                   | 3            | CMST 3300 or COMM 3900 | 3            |
| CMST 3300 or COMM 3900      | 3            | Major elective         | 3            |
| Major elective              | 3            | Minor/elective         | 3            |
|                             | 15           |                        | 15           |
| <b>Senior</b>               |              |                        |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |
| COMM 3800 or CMST 4330      | 3            | Minor/electives        | 15           |
| PURE 4997                   | 3            |                        |              |
| Minor/electives             | 11           |                        |              |
|                             | 17           |                        | 15           |
| Total credit hours: 128-130 |              |                        |              |

\* COMM 2100 Introduction to Visual Communication cannot be used to fulfill the UCCS Literature/Performing Arts requirement.

## Public Relations Minor

### Required Courses

|                        |  |    |
|------------------------|--|----|
| ADPR 1800              | Public Relations Principles  | 3  |
| ADPR 2200              | Media Writing  | 3  |
| And four courses from: |  | 12 |
| ADPR 2400              | Strategic Research and Planning for Advertising and Public Relations |    |
| ADPR 3200              | Marketing Communications Design and Production                       |    |
| ADPR 3600              | Public Relations Writing   |    |
| ADPR 4200              | Business to Business Marketing Communication                         |    |

|           |  |
|-----------|--|
| ADPR 4300 | Emerging and Social Media in a Dynamic Marketplace               |
| ADPR 4500 | Advertising and Public Relations Account Management              |
| ADPR 4600 | Multicultural and International Advertising and Public Relations |
| ADPR 4700 | Cultural Identity, Media and World Religions                     |
| ADPR 4953 | Seminar in Advertising and Public Relations                      |
| PURE 4997 | Public Relations Campaigns                                       |

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Total Credit Hours

18



# Broadcast and Electronic Communication

## Broadcast and Electronic Communication Major

The major in broadcast and electronic communication is designed to provide students with the knowledge and skills necessary for effective communication through the electronic media. Such opportunities exist in commercial radio and television, public broadcasting, corporate media, cable communication and associated industries. Courses emphasize the creative extension and application of mass communication theory in the development of informative and entertaining programs for electronic media. Programs of study appropriate for careers in production, programming, writing, management, audience research, sales or alternative media can be selected. Students interested in broadcast journalism should select journalism as a major.

**Requirements for a Major:** A total of 39 credits of course work must be completed for the major in broadcast and electronic communication. Students with a major in broadcast and electronic communication cannot take more than 48 credits in the mass communication areas (ADPR, BREC, COMM, JOUR) and are required to take 80 credits outside of mass communication areas with at least 65 credits in the liberal arts.

### Required Courses

|  |   |    |
|--|---|----|
| BREC 1964  | Practicum in Student Broadcasting       | 1  |
| BREC 2205  | Production Techniques                   | 3  |
| BREC 2250  | Video Production                        | 3  |
| BREC 2335  | Script and Continuity                   | 3  |
| BREC 4997  | Senior Capstone                         | 2  |
| COMM 3800  | Media Law                               | 3  |
| COMM 3900  | Ethical Problems of Mass Communications | 3  |
| COMM 4400  | Mass Communication Theory and Research  | 3  |
| Select one of the following two courses:               |   | 3  |
| BREC 4840  | Film and TV Aesthetics                  |    |
| BREC 4850  | Television Criticism                    |    |
| Select one of the following three courses:             |   | 3  |
| BREC 2555  | Corporate Media                         |    |
| BREC 2565  | The Business of Entertainment           |    |
| COMM 4600  | Media Management                        |    |
| BREC/Mass Comm electives (ADVE/PURE/JOUR/COMM courses) |   | 12 |
| Total Credit Hours                                     |   | 39 |

The following courses are also required but do not count as hours in the major:

|                           |   |   |
|---------------------------|---|---|
| PSYC 1001                 | General Psychology                        | 3 |
| And one of the following: |   | 3 |
| MATH 1700                 | Modern Elementary Statistics              |   |
| PSYC 2001                 | Psychological Measurements and Statistics |   |
| SOCI 2060                 | Social Statistics                         |   |
| Total Credit Hours        |   | 6 |

## Typical Program for Broadcast and Electronic Communication Majors

| Freshman                              |       |                                       |       |
|---------------------------------------|-------|---------------------------------------|-------|
| First Term                            | Hours | Second Term                           | Hours |
| BREC 1964                             | 1     | BREC 2205                             | 3     |
| CMST 1000                             | 3     | COMM 1100                             | 3     |
| ENGL 1001                             | 3     | COMM 1200                             | 3     |
| UCCS (HCS)                            | 3     | THEO 1001 (UCCS (T))                  | 3     |
| Foreign Language or UCCS (DC)         | 3-4   | Foreign Language or UCCS (DC)         | 3-4   |
| PSYC 1001 (UCCS (ISB))                | 3     |                                       |       |
|                                       | 16-17 |                                       | 15-16 |
| Sophomore                             |       |                                       |       |
| First Term                            | Hours | Second Term                           | Hours |
| BREC 2250                             | 3     | BREC 2335                             | 3     |
| COMM 2100 (or UCCS (DC)) <sup>*</sup> | 3     | MATH 1700 (UCCS (MR) or (SN))         | 3     |
| COMM 2500                             | 3     | UCCS (LPA)                            | 3     |
| PHIL 1001 (UCCS (HNE))                | 3     | COMM 2100 (or UCCS (DC)) <sup>*</sup> | 3     |
| Minor/elective                        | 3     | Minor/elective                        | 3     |
|                                       | 15    |                                       | 15    |
| Junior                                |       |                                       |       |
| First Term                            | Hours | Second Term                           | Hours |
| COMM 4400                             | 3     | COMM 3800 or 3900                     | 3     |
| MATH 1700 (UCCS (MR) or (SN))         | 3     | BREC electives                        | 3     |
| BREC electives                        | 6     | Minor/electives                       | 9     |

|                                |              |                                |              |
|--------------------------------|--------------|--------------------------------|--------------|
| PHIL 2310 (UCCS (HNE))         | 3            | UCCS (T)                       | 3            |
|                                | 15           |                                | 18           |
| <b>Senior</b>                  |              |                                |              |
| <b>First Term</b>              | <b>Hours</b> | <b>Second Term</b>             | <b>Hours</b> |
| BREC 4997 (or minor/electives) | 2            | BREC 4997 (or minor/electives) | 2            |
| Major or minor electives       | 12           | BREC electives                 | 6            |
| COMM 3800 or 3900              | 3            | Major or minor electives       | 9            |
|                                | 17           |                                | 17           |
| Total credit hours: 128-130    |              |                                |              |

\* COMM 2100 Introduction to Visual Communication cannot be used to fulfill the UCCS Literature/Performing Arts requirement.

## Broadcast and Electronic Communication Minor

### Required Courses

|   |  |    |
|---|--|----|
| BREC 1964                                   | Practicum in Student Broadcasting      | 1  |
| BREC 2205                                   | Production Techniques                  | 3  |
| COMM 1200                                   | Media in Society                       | 3  |
| COMM 4400                                   | Mass Communication Theory and Research | 3  |
| And 10 credits selected from the following: |  | 10 |
| BREC 2250                                   | Video Production                       |    |
| BREC 2335                                   | Script and Continuity                  |    |
| BREC 2445                                   | Multimedia News 1                      |    |
| BREC 2555                                   | Corporate Media                        |    |
| BREC 2565                                   | The Business of Entertainment          |    |
| BREC 2610                                   | Program Development                    |    |
| BREC 2710                                   | Sound Design                           |    |
| BREC 3460                                   | Multimedia News 2                      |    |
| BREC 3510                                   | Broadcast Sales and Promotion          |    |
| BREC 3900                                   | Public Policy in Telecommunications    |    |

|                    |   |    |
|--------------------|---|----|
| BREC 3964          | Practicum in Student Media                                  |    |
| BREC 3986          | Internship in Broadcast and Electronic Communication        |    |
| BREC 4240          | Television Performance                                      |    |
| BREC 4275          | Advanced Television Production and Direction                |    |
| BREC 4345          | Advanced Scriptwriting                                      |    |
| BREC 4440          | Multimedia News 3   |    |
| BREC 4615          | Radio Programming   |    |
| BREC 4620          | Television Programming                                      |    |
| BREC 4810          | American Television: 1946-Present                           |    |
| BREC 4830          | Early History of Broadcasting                               |    |
| BREC 4840          | Film and TV Aesthetics                                      |    |
| BREC 4850          | Television Criticism  |    |
| BREC 4855          | Communication and Social Issues of the Internet             |    |
| BREC 4910          | Technology and Learning                                     |    |
| BREC 4920          | Multi-Media Authoring                                       |    |
| BREC 4931          | Topics in Broadcast and Electronic Communication            |    |
| BREC 4953          | Seminar in Broadcast and Electronic Communication:          |    |
| BREC 4961          | Special Institute/Workshop/Project                          |    |
| BREC 4995          | Independent Study in Broadcast and Electronic Communication |    |
| BREC 4997          | Senior Capstone   |    |
| BREC 4999          | Senior Thesis   |    |
| Total Credit Hours |   | 20 |

Some courses under the headings of ADPR, COMM and JOUR may be counted as BREC electives with departmental approval.

# Communication Studies

## Communication Studies Major

Our ability to communicate defines what it means to be human and is a central feature of our existence. People communicate in a variety of contexts: interpersonal, group, organizational, public and intercultural. This major examines the theories, concepts and skills related to human interaction and gives students the opportunity to develop personal communication skills. The focus of the major is the development of the ability to understand and critique communication practices.

The communication studies major explores organizational and managerial communication, family communication, gender and interpersonal communication, multicultural and international communication and argumentation and persuasion. Students have the flexibility to choose a specific area of focus or to combine several in ways that best meet their interests and career plans. Communication studies majors will be prepared for careers in a variety of fields including corporations, politics, family and social service agencies, multinational organizations, law, nonprofit organizations and education.

**Requirements for the Major:** A total of 33 credits of course work must be completed for the major in communication studies.

### Required Courses

|                                |                                       |    |
|--------------------------------|---------------------------------------|----|
| CMST 1000                      | Introduction to Communication         | 3  |
| CMST 2100                      | Interpersonal Communication           | 3  |
| CMST 2310                      | Argument in Contemporary Society      | 3  |
| CMST 2600                      | Foundations of Communication Studies  | 3  |
| CMST 3200                      | Organizational Communication          | 3  |
| CMST 3300                      | Persuasion                            | 3  |
| CMST 4997                      | Communication and Contemporary Issues | 3  |
| And 12 hours of CMST electives |                                       | 12 |
| Total Credit Hours             |                                       | 33 |

## Typical Program for Communication Studies Majors

| Freshman                      |       |                               |       |
|-------------------------------|-------|-------------------------------|-------|
| First Term                    | Hours | Second Term                   | Hours |
| CMST 1000                     | 3     | COMM 1200                     | 3     |
| ENGL 1001 (UCCS (R))          | 3     | Foreign language or UCCS (DC) | 3-4   |
| UCCS (HCS)                    | 3     | CMST 2100 or 2600             | 3     |
| Foreign language or UCCS (DC) | 3-4   | UCCS (MR) or (SN)             | 3-4   |

|                             |              |                           |              |
|-----------------------------|--------------|---------------------------|--------------|
| THEO 1001 (UCCS (T))        | 3            | UCCS (ISB)                | 3            |
|                             | 15-16        |                           | 15-17        |
| <b>Sophomore</b>            |              |                           |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>        | <b>Hours</b> |
| COMM 1100 (UCCS (R))        | 3            | COMM 2100 (or UCCS (DC))* | 3            |
| COMM 2100 (or UCCS (DC))*   | 3            | COMM 2500                 | 3            |
| UCCS (MR) or (SN)           | 3-4          | Major/Minor electives     | 9            |
| CMST 2100 or 2600           | 3            | UCCS (LPA)                | 3            |
| CMST 2310                   | 3            |                           |              |
|                             | 15-16        |                           | 18           |
| <b>Junior</b>               |              |                           |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>        | <b>Hours</b> |
| CMST 3200                   | 3            | CMST 3300                 | 3            |
| PHIL 1001 (UCCS (HNE))      | 3            | PHIL 2310 (UCCS (HNE))    | 3            |
| Major/Minor electives       | 12           | Major/minor electives     | 12           |
|                             | 18           |                           | 18           |
| <b>Senior</b>               |              |                           |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>        | <b>Hours</b> |
| Major/Minor electives       | 11-15        | CMST 4997                 | 3            |
| UCCS (T)                    | 3            | Major/minor electives     | 12-15        |
|                             | 14-18        |                           | 15-18        |
| Total credit hours: 128-139 |              |                           |              |

\* COMM 2100 Introduction to Visual Communication cannot be used to fulfill the UCCS Literature/Performing Arts requirement.

## Wisconsin Teaching Licensure in Speech Communication (Middle Childhood/Early Adolescence)

In addition to completing all requirements as specified by the College of Education, students must also complete all requirements listed under the communication studies major.

## Wisconsin Teaching Licensure in Speech Communication (Early Adolescence/Adolescence)

In addition to completing all requirements as specified by the College of Education as well as those listed under the communication studies major, students seeking Wisconsin teaching licensure in speech communication at the early adolescence/adolescence level must also complete:

|                    |   |   |
|--------------------|---|---|
| COMM 1200          | Media in Society                                  | 3 |
| CMST 4810          | Directing Speech Activities                       | 3 |
| CMST 4400          | Cross-Cultural Communication in the United States | 3 |
| Total Credit Hours |   | 9 |

The latter two will count toward required electives in the communication studies major.

## Communication Studies Minor

### Required Courses

|                      |                                  |    |
|----------------------|----------------------------------|----|
| CMST 1000            | Introduction to Communication    | 3  |
| CMST 2100            | Interpersonal Communication      | 3  |
| CMST 2310            | Argument in Contemporary Society | 3  |
| or CMST 3300         | Persuasion                       |    |
| Plus CMST electives. |                                  | 9  |
| Total Credit Hours   |                                  | 18 |

# Corporate Communication

## Corporate Communications Major

Work in the corporate environment will require students to accurately assess internal and external corporate communication needs and frame strategic responses that are appropriate to multiple contexts and audiences. Students will also need to understand the role of the corporation within our contemporary global society as well as the way in which communication helps shape, maintain and ultimately transform various aspects of corporate identity, culture and vision.

The corporate communication major is designed to address these needs by providing a broad-based curriculum that draws from both theory and practice. After successfully completing this major, students will be able to think critically about the role of the corporation, understand the intersection of corporate and communication practice and develop skills that can be applied across various corporate contexts.

**Requirements for the Major:** A total of 41 credits of course work are required for completion of the major in corporate communication.

### Required Courses

|                    |                                   |    |
|--------------------|-----------------------------------|----|
| CCOM 2000          | Issues in Corporate Communication | 3  |
| CCOM 3250          | Corporate Writing                 | 3  |
| CCOM 3750          | Corporate Rhetoric                | 3  |
| CCOM 4750          | Corporate Social Responsibility   | 3  |
| ADPR 1800          | Public Relations Principles       | 3  |
| ADPR 2200          | Media Writing                     | 3  |
| BUAD 2005          | Business Foundations              | 2  |
| CMST 3200          | Organizational Communication      | 3  |
| CMST 4600          | Communication Consulting          | 3  |
| ECON 1001          | Introduction to Economics (*)     | 3  |
| MATH 1700          | Modern Elementary Statistics (**) | 3  |
| Total Credit Hours |                                   | 32 |

Students must select three courses from the list below: 9

|           |  |
|-----------|--|
| ADPR 3200 | Marketing Communications Design and Production     |
| ADPR 4300 | Emerging and Social Media in a Dynamic Marketplace |
| BREC 2555 | Corporate Media                                    |
| BULA 3001 | Legal Environment of Business                      |
| CMST 4260 | New Communication Technologies in the Workplace    |



|                    |  |
|--------------------|--|
| CMST 4270          | Communicating in Multinational Organizations |
| CCOM 4931          | Topics in Corporate Communication            |
| CCOM 4986          | Corporate Communication Internship (***)     |
| HURE 3001          | Management of Human Resources                |
| MANA 3001          | Behavior and Organization                    |
| MARK 3001          | Introduction to Marketing                    |
| PHIL 4330          | Business Ethics                              |
| <hr/>              |  |
| Total Credit Hours | 9  |

\* ECON 2003 may be substituted.

\*\* PSYC 2001, SOCI 2001, or MANA 2029 may be substituted.

\*\*\* Up to 3 internship credits may be counted toward the major.

## Typical Program for Corporate Communication Majors

| Freshman                                  |       |   |       |
|---|-------|---|-------|
| First Term                                | Hours | Second Term                               | Hours |
| CMST 1000                                 | 3     | COMM 2100 or 1100 (UCCS (R)) <sup>*</sup> | 3     |
| ENGL 1001                                 | 3     | ECON 1001 (UCCS (ISB))                    | 3     |
| UCCS (HCS)                                | 3     | Foreign language or UCCS (DC)             | 3-4   |
| Foreign language or UCCS (DC)             | 3-4   | UCCS (SN)                                 | 3-4   |
| THEO 1001 (UCCS (T))                      | 3     | COMM 1200                                 | 3     |
|   | 15-16 |   | 15-17 |
| Sophomore                                 |       |   |       |
| First Term                                | Hours | Second Term                               | Hours |
| COMM 2100 or 1100 (UCCS (R)) <sup>*</sup> | 3     | ADPR 2200 or BUAD 2005                    | 3     |
| CCOM 2000                                 | 3     | UCCS (LPA)                                | 3     |
| ADPR 2200 or BUAD 2005                    | 3     | PHIL 1001 (UCCS (HNE))                    | 3     |
| COMM 2500                                 | 3     | ADPR 1800 or CMST 3200                    | 3     |
| ADPR 1800 or CMST 3200                    | 3     | MATH 1700 (UCCS (MR))                     | 3     |
|   | 15    |   | 15    |

| <b>Junior</b>               |              |                    |              |
|-----------------------------|--------------|--------------------|--------------|
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b> | <b>Hours</b> |
| PHIL 2310 (UCCS (HNE))      | 3            | UCCS (T)           | 3            |
| CCOM 3250                   | 3            | CCOM 3750          | 3            |
| CMST 4600                   | 3            | CCOM elective      | 3            |
| Minor/electives             | 6-9          | UCCS (DC)          | 3            |
|                             |              | Minor/elective     | 6            |
|                             | 15-18        |                    | 18           |
| <b>Senior</b>               |              |                    |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b> | <b>Hours</b> |
| CCOM electives              | 6            | CCOM 4750          | 3            |
| Minor/electives             | 11           | Minor/electives    | 15           |
|                             | 17           |                    | 18           |
| Total credit hours: 128-134 |              |                    |              |

\* COMM 2100 Introduction to Visual Communication cannot be used to fulfill the UCCS Literature/Performing Arts requirement.

## Fine Arts

These minors are unique programs created in collaboration with the nearby Milwaukee Institute of Art and Design (MIAD). Students have the opportunity to enhance creative skills, increase knowledge of the arts and fulfill artistic desires by choosing one of the four minors: Fine Arts-Motion Narrative, Fine Arts-Graphic Design, Fine Arts-Photography and Fine Arts-Studio Art. Each minor offers a unique blend of creative conceptualizing, execution, theory and technology. Students should declare their intention to minor in these Fine Arts Minors at the start of the sophomore year by completing a Declaration of Minor form in the college office. Each minor requires 18 credits.

Marquette students do not need to declare a minor in order to take courses at MIAD, although they must be enrolled at Marquette with full-time status in order to register for FIAR courses. Full-time students are eligible to register for a maximum of six credits of FIAR courses in each semester, and they must be able to meet any prerequisites before registering for a course. Students should consult the Schedule of Classes at the time of registration. The tuition cost of enrolling in MIAD courses is included in the Marquette full-time student tuition rate; however, other course material fees may apply, and students will need to pay them directly to MIAD before the start of classes. All courses are offered at MIAD unless otherwise noted with an asterisk. MIAD is located at 273 East Erie Street.

Further information can be obtained by contacting Dr. Jean Grow in the Diederich College of Communication.

## Fine Arts Minors

### Motion Narrative

The motion narrative minor is designed for students interested in a creative, interdisciplinary minor with an emphasis in either video or animation.

#### Required

|                    |   |    |
|--------------------|---|----|
| FIAR 1100          | Visual Dynamics 1: Concept, Process and Composition | 3  |
| FIAR 2020          | Animation 1   | 3  |
| or FIAR 2050       | Video 1   |    |
| Select four        |   | 12 |
| ADPR 4300          | Emerging and Social Media in a Dynamic Marketplace  |    |
| THAR 1100          | Acting 1: Fundamental Technique                     |    |
| BREC 2335          | Script and Continuity                               |    |
| ENTP 3001          | Understanding Entrepreneurship                      |    |
| FIAR 2810          | Elements of Digital Photography                     |    |
| FIAR 2080          | Drawing for Animation                               |    |
| FIAR 2070          | Introduction to Sound                               |    |
| FIAR 3030          | 3D Computer Animation                               |    |
| Total Credit Hours |   | 18 |

## Graphic Design

The graphic design minor is designed for students who wish to pursue work in graphic design across print and digital media.

### Required

|                    |   |    |
|--------------------|---|----|
| FIAR 1100          | Visual Dynamics 1: Concept, Process and Composition | 3  |
| FIAR 2030          | Typography 1  | 3  |
| FIAR 2400          | Computer Studio 1                                   | 3  |
| FIAR 2900          | Communication Design 1                              | 3  |
| FIAR 2910          | Communication Design 2                              | 3  |
| Select one         |   | 3  |
| FIAR 2410          | Computer Studio 2                                   |    |
| FIAR 2040          | Typography 2  |    |
| FIAR 3040          | Packaging Design                                    |    |
| FIAR 3050          | Advertising Design                                  |    |
| Total Credit Hours |   | 18 |

## Photography

The photography minor is designed for students who wish to deepen their knowledge of photography by allowing them to select courses from a broad range of approaches from fine arts, photojournalism and commercial photography.

### Required

|                    |  |    |
|--------------------|--|----|
| FIAR 1120          | Research, Practice and Methods 1               | 3  |
| FIAR 2810          | Elements of Digital Photography                | 3  |
| Select four        |  | 12 |
| FIAR 2800          | Principles of Photography                      |    |
| FIAR 2920          | Lighting                                       |    |
| FIAR 2930          | Printing Processes                             |    |
| FIAR 3900          | Photographic Problems                          |    |
| FIAR 3910          | Photographic Voice                             |    |
| FIAR 3931          | Topics in Fine Art 2 (Elective in Photography) |    |
| Total Credit Hours |  | 18 |

## Studio Art

The studio art minor is designed for students who wish to create a minor that focuses on artistic development. One of two approaches is recommended: 1) a defined focus in one creative discipline (e.g., drawing) with courses in levels I through III, or 2) a diverse mix of level I classes from across multiple creative disciplines, (e.g., level I of drawing, painting, sculpture).

### Required

#### MIAD:

|           |                         |   |
|-----------|-------------------------|---|
| FIAR 1000 | Observational Drawing 1 | 3 |
|-----------|-------------------------|---|

|           |   |   |
|-----------|---|---|
| FIAR 1100 | Visual Dynamics 1: Concept, Process and Composition | 3 |
|-----------|---|---|

#### Marquette:

|           |                          |   |
|-----------|--------------------------|---|
| HIST 1201 | History of Western Art 1 | 3 |
|-----------|--------------------------|---|

|              |                          |  |
|--------------|--------------------------|--|
| or HIST 1202 | History of Western Art 2 |  |
|--------------|--------------------------|--|

|   |  |   |
|---|--|---|
| Select three from within a single concentrated area or across areas |  | 9 |
|---|--|---|

|           |           |
|-----------|-----------|
| FIAR 2000 | Drawing 1 |
|-----------|-----------|

|           |           |
|-----------|-----------|
| FIAR 2010 | Drawing 2 |
|-----------|-----------|

|           |           |
|-----------|-----------|
| FIAR 3000 | Drawing 3 |
|-----------|-----------|

|           |                  |
|-----------|------------------|
| FIAR 2100 | Figure Drawing 1 |
|-----------|------------------|

|           |                  |
|-----------|------------------|
| FIAR 2110 | Figure Drawing 2 |
|-----------|------------------|

|           |                  |
|-----------|------------------|
| FIAR 3100 | Figure Drawing 3 |
|-----------|------------------|

|           |            |
|-----------|------------|
| FIAR 2220 | Painting 1 |
|-----------|------------|

|           |            |
|-----------|------------|
| FIAR 2230 | Painting 2 |
|-----------|------------|

|           |            |
|-----------|------------|
| FIAR 3200 | Painting 3 |
|-----------|------------|

|           |                 |
|-----------|-----------------|
| FIAR 3220 | Figure Painting |
|-----------|-----------------|

|           |               |
|-----------|---------------|
| FIAR 2240 | Water Media 1 |
|-----------|---------------|

|           |               |
|-----------|---------------|
| FIAR 2250 | Water Media 2 |
|-----------|---------------|

|           |               |
|-----------|---------------|
| FIAR 3070 | Water Media 3 |
|-----------|---------------|

|           |                                 |
|-----------|---------------------------------|
| FIAR 2700 | Principles of Stone Lithography |
|-----------|---------------------------------|

|           |                              |
|-----------|------------------------------|
| FIAR 2300 | Principles of Screenprinting |
|-----------|------------------------------|

|           |                       |
|-----------|-----------------------|
| FIAR 2600 | Principles of Etching |
|-----------|-----------------------|

|           |   |
|-----------|---|
| FIAR 3680 | Advanced Printmaking Interdisciplinary Approach 1 |
|-----------|---|

|           |   |
|-----------|---|
| FIAR 3690 | Advanced Printmaking Interdisciplinary Approach 2 |
|-----------|---|

|           |                                    |
|-----------|------------------------------------|
| FIAR 2560 | Contemporary Practices Sculpture 1 |
|-----------|------------------------------------|

|           |                                    |
|-----------|------------------------------------|
| FIAR 3560 | Contemporary Practices Sculpture 2 |
|-----------|------------------------------------|

|                    |   |    |
|--------------------|---|----|
| FIAR 3510          | Integrated Studio Sculpture                         |    |
| FIAR 2500          | Sculpture: Casting & Carving                        |    |
| FIAR 2510          | Construction: Metal & Wood                          |    |
| FIAR 2520          | Figure Sculpture 1                                  |    |
| FIAR 2530          | Figure Sculpture 2                                  |    |
| FIAR 2420          | Materials and Methods 1                             |    |
| FIAR 3540          | The Material Aesthetic: Foundry                     |    |
| FIAR 3530          | Topics in the Expanded Field: Body                  |    |
| FIAR 3520          | Topics in the Expanded Field: Anatomy and Structure |    |
| FIAR 3550          | Topics in the Expanded Field: Public Art            |    |
| FIAR 3580          | Topics in the Expanded Field: Mapping               |    |
| Total Credit Hours |   | 18 |

# Journalism

## Journalism Major

The major in journalism is focused on teaching students to gather, synthesize and produce news and information in a form appropriate to the medium and audience. Majors, grounded in the liberal arts, learn about those areas of law, history, ethics and social science that relate to the information media and its functions in society and acquire the professional expertise necessary to pursue careers in journalism itself as well as related fields such as law, business and government. Writing is emphasized.

The journalism faculty has adopted the following profile of the responsible journalist:

"The professional multimedia journalist gathers, analyzes, synthesizes and presents news and information, skillfully drawing on a variety of courses in order to help maintain a fully-informed, diverse, self-governing citizenry. The multimedia journalist is guided in the development and production of news and information by commitments to truth, social responsibility and Fourth Estate principles, as well as two principles of human cognition. S/he understands the variety of forms that news and information can take, including objective accounts of the day's events as well as advocacy and other storytelling approaches where appropriate. S/he is able to place the practice of journalism within the theoretical, methodological, historical, ethical and legal contexts of the field. The multimedia journalist is independent, intellectually curious, rigorous, flexible, enterprising and innovative" (adopted by the journalism faculty on November 12, 2010).

**Requirements for a Major:** A total of 40 credits of course work must be completed for the major in journalism. Students with a major in journalism cannot take more than 48 credits in the mass communication areas (ADPR, BREC, COMM and JOUR) and are required to take 80 credits outside of the mass communication areas with at least 65 credits in the liberal arts. The following courses must be completed toward the 40 credits:

### Required Courses

|                             |   |   |
|-----------------------------|---|---|
| JOUR 1100                   | Digital Journalism 1: Journalism Bootcamp                     | 3 |
| JOUR 1550                   | Digital Journalism 2: Reporting and News Design               | 3 |
| JOUR 1964                   | Practicum in Student Publications                             | 1 |
| JOUR 2100                   | Digital Journalism 3: Community Reporting                     | 3 |
| COMM 3800                   | Media Law   | 3 |
| COMM 3900                   | Ethical Problems of Mass Communications                       | 3 |
| One Theory/Research Course: |   | 3 |
| BREC 4855                   | Communication and Social Issues of the Internet               |   |
| COMM 4100                   | Mass Media and the American Family                            |   |
| COMM 4200                   | International Communication                                   |   |
| COMM 4300                   | Survey Research and Reasoning for Communication Professionals |   |
| COMM 4400                   | Mass Communication Theory and Research                        |   |
| COMM 4500                   | Race and Gender Issues in Mass Media                          |   |
| One History Course:         |   | 3 |

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|   |   |    |
|---|---|----|
| BREC 4810   | American Television: 1946-Present               |    |
| BREC 4830   | Early History of Broadcasting                   |    |
| JOUR 4600   | History of American News Media                  |    |
| Three Writing Courses:  |   | 9  |
| JOUR 4110   | Persuasive Writing                              |    |
| JOUR 4120   | Feature Writing                                 |    |
| JOUR 4130   | Critical Writing                                |    |
| JOUR 4140   | Depth Reporting                                 |    |
| JOUR 4150   | Investigative Reporting                         |    |
| JOUR 4160   | Narrative Nonfiction Reporting                  |    |
| JOUR 4310   | Communication of Urban Issues                   |    |
| JOUR 4320   | Religious Journalism                            |    |
| JOUR 4330   | Health, Science and Environmental Communication |    |
| JOUR 4340   | Business and Economic Journalism                |    |
| JOUR 4350   | Sports Journalism                               |    |
| JOUR 4360   | Freelance Writing                               |    |
| Two Design/Editing Course:  |   | 6  |
| ADPR 3200   | Marketing Communications Design and Production  |    |
| BREC 4615   | Radio Programming                               |    |
| COMM 4600   | Media Management                                |    |
| JOUR 1200   | Basic Photography                               |    |
| JOUR 4200   | Publications Editing                            |    |
| JOUR 4500   | Newspaper Design and Production                 |    |
| JOUR 4510   | Magazine Design and Production                  |    |
| One Senior Capstone Course:   |   | 3  |
| JOUR 4996   | Capstone: Journalism News Service               |    |
| JOUR 4997   | Capstone: Magazine with a Mission               |    |
| Total Credit Hours  |   | 40 |
| The following courses also are required but do not count as hours in the major: |   |    |
| ECON 1001   | Introduction to Economics                       | 3  |
| POSC 2201   | American Politics                               | 3  |



Plus one of the following: 3

|           |   |
|-----------|---|
| MATH 1700 | Modern Elementary Statistics              |
| PSYC 2001 | Psychological Measurements and Statistics |
| SOCI 2060 | Social Statistics                         |

One course in U.S. history: 3

One of the following: 3

|           |                           |
|-----------|---------------------------|
| PSYC 1001 | General Psychology        |
| SOCI 1001 | Principles of Sociology   |
| ANTH 1001 | Introductory Anthropology |

Plus one advanced course in the same subject. 3

Total Credit Hours 18

## Typical Program for Journalism Majors

| Freshman                            |       |                                      |       |
|-------------------------------------|-------|--------------------------------------|-------|
| First Term                          | Hours | Second Term                          | Hours |
| CMST 1000                           | 3     | COMM 1200                            | 3     |
| ENGL 1001 (UCCS (R))                | 3     | PHIL 1001 (UCCS (HNE))               | 3     |
| HIST 1101 (UCCS (HCS))              | 3     | Foreign language or UCCS (DC)        | 3-4   |
| Foreign language or UCCS (DC)       | 3-4   | PSYC 1001 or SOCI 1001               | 3     |
| THEO 1001 (UCCS (T))                | 3     | JOUR 1100                            | 3     |
| JOUR 1964                           | 1     |                                      |       |
|                                     | 16-17 |                                      | 15-16 |
| Sophomore                           |       |                                      |       |
| First Term                          | Hours | Second Term                          | Hours |
| COMM 1100 (UCCS (R))                | 3     | COMM 2100 (or UCCS (DC))*            | 3     |
| COMM 2100 (or UCCS (DC))*           | 3     | ECON 1001 or POSC 2201 (UCCS (ISB) ) | 3     |
| COMM 2500                           | 3     | JOUR 2100                            | 3     |
| ECON 1001 or POSC 2201 (UCCS (ISB)) | 3     | MATH 1700 (UCCS (MR) or UCCS (SN))   | 3     |
| JOUR 1550                           | 3     | PHIL 2310 (UCCS (HNE))               | 3     |

|                                    |              |                                     |              |
|------------------------------------|--------------|-------------------------------------|--------------|
| MATH 1700 (UCCS (MR) or UCCS (SN)) | 3            | UCCS (LPA)                          | 3            |
|                                    | 18           |                                     | 18           |
| <b>Junior</b>                      |              |                                     |              |
| <b>First Term</b>                  | <b>Hours</b> | <b>Second Term</b>                  | <b>Hours</b> |
| JOUR History elective              | 3            | Upper division ANTH or PSYC or SOCI | 3            |
| JOUR Theory/Research elective      | 3            | JOUR Design elective                | 3            |
| JOUR Writing elective              | 3            | JOUR Writing elective               | 3            |
| Minor                              | 6            | Minor/elective                      | 6-9          |
| UCCS (T)                           | 3            |                                     |              |
|                                    | 18           |                                     | 15-18        |
| <b>Senior</b>                      |              |                                     |              |
| <b>First Term</b>                  | <b>Hours</b> | <b>Second Term</b>                  | <b>Hours</b> |
| COMM 3800 or 3900                  | 3            | COMM 3800 or 3900                   | 3            |
| JOUR Design elective               | 3            | JOUR 4996 or 4997                   | 3            |
| JOUR Writing elective              | 3            | Minor/electives                     | 7-12         |
| Minor/electives                    | 6            |                                     |              |
|                                    | 15           |                                     | 13-18        |
| Total credit hours: 128-138        |              |                                     |              |

\* COMM 2100 Introduction to Visual Communication cannot be used to fulfill the UCCS Literature/Performing Arts requirement.

## **Wisconsin Teaching Licensure in Journalism (Middle Childhood/Early Adolescence)**

In addition to completing all requirements as specified by the College of Education, students must also complete all requirements listed under the journalism major.

## **Wisconsin Teaching Licensure in Journalism (Early Adolescence/Adolescence)**

In addition to completing all requirements as specified by the College of Education, students seeking Wisconsin teaching licensure in journalism at the early adolescence/adolescence level must also complete 34 hours including:

### **Required Courses**

|                           |   |    |
|---------------------------|---|----|
| JOUR 1964                 | Practicum in Student Publications                                       | 1  |
| JOUR 1100                 | Digital Journalism 1: Journalism Bootcamp                               | 3  |
| JOUR 2100                 | Digital Journalism 3: Community Reporting                               | 3  |
| JOUR 4120                 | Feature Writing   | 3  |
| or JOUR 4140              | Depth Reporting   |    |
| JOUR 4200                 | Publications Editing  | 3  |
| JOUR 4500                 | Newspaper Design and Production   | 3  |
| or JOUR 4510              | Magazine Design and Production  |    |
| JOUR 4600                 | History of American News Media  | 3  |
| JOUR 4800                 | Methods for Advising School Publications, Teaching Secondary Journalism | 3  |
| COMM 1200                 | Media in Society  | 3  |
| COMM 3800                 | Media Law   | 3  |
| COMM 3900                 | Ethical Problems of Mass Communications                                 | 3  |
| And one of the following: |   | 3  |
| COMM 4100                 | Mass Media and the American Family                                      |    |
| COMM 4200                 | International Communication   |    |
| COMM 4400                 | Mass Communication Theory and Research                                  |    |
| COMM 4500                 | Race and Gender Issues in Mass Media                                    |    |
| Total Credit Hours        |   | 34 |

## Performing Arts

Design and build stage sets, create costumes and bring characters to life through movement, voice and music. Hone your ability to build connections with the audience—and, through Marquette's broad liberal arts curriculum, learn to connect the performing arts to other disciplines.

The Department of Performing Arts offers a major and minor in theatre arts as well as minors in dance, film and music. The major and minors are declared in the sophomore or junior years. Your adviser will assist you in selecting classes to satisfy the major and minor requirements.

# Dance

## Dance Minor

### Required Courses

#### Core Technique Courses

|           |                 |   |
|-----------|-----------------|---|
| DANC 2020 | Ballet 1        | 3 |
| DANC 2120 | Modern Dance 1  | 3 |
| DANC 2220 | African Dance 1 | 3 |
| DANC 2420 | Tap Dance 1     | 3 |

#### History and Theory

|           |                              |   |
|-----------|------------------------------|---|
| DANC 2500 | Composition and Choreography | 3 |
| DANC 4500 | Dance History                | 3 |

Electives (select one) 3

|           |                 |  |
|-----------|-----------------|--|
| DANC 2040 | Ballet 2        |  |
| DANC 2140 | Modern Dance 2  |  |
| DANC 2440 | Tap Dance 2     |  |
| DANC 3100 | Theatre Dance   |  |
| DANC 2240 | African Dance 2 |  |

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Total Credit Hours 21

# Film

## Film Minor

### Required Courses

Choose six courses from the following:

18

|           |  |
|-----------|--|
| FILM 1931 | Topics in Film Studies                 |
| FILM 2240 | Film as Communication                  |
| FILM 2260 | Film as Art                            |
| FILM 2280 | Film and Popular Culture               |
| FILM 2290 | Economic and Social Aspects of Film    |
| FILM 2310 | Film Production                        |
| FILM 2620 | History of Film                        |
| FILM 4953 | Seminar in Film                        |
| FILM 4995 | Independent Study in Film              |
| FILM 4999 | Senior Thesis                          |
| ENGL 4780 | Literature in Film                     |
| FREN 3600 | French and Francophone Film or Theatre |
| MUSI 2420 | History of the Musical in America      |

Total Credit Hours

18

# Music

## Music Minor

### Required Courses

|   |                                     |    |
|---|-------------------------------------|----|
| MUSI 2410   | Music History                       | 3  |
| MUSI 2500   | Music Theory 1                      | 3  |
| MUSI 3500   | Music Theory 2                      | 3  |
| Two courses chosen from the following:  |                                     | 6  |
| MUSI 1610   | Carillon Discovery: An Introduction |    |
| MUSI 2420   | History of the Musical in America   |    |
| MUSI 2440   | History of Jazz                     |    |
| MUSI 2460   | Wind Band History and Analysis      |    |
| MUSI 2610   | Music Technology                    |    |
| MUSI 2910   | The Business of Music               |    |
| MUSI 3610   | Conducting                          |    |
| HIST 3165   | History of Rock and Roll            |    |
| Students must also participate in at least four semesters of one-credit, approved ensembles, including: |                                     | 4  |
| MUSI 1100   | University Chorus                   |    |
| MUSI 1200   | Symphonic Band                      |    |
| MUSI 1300   | Symphony Orchestra                  |    |
| Total Credit Hours  |                                     | 19 |

# Theatre Arts

## Theatre Arts Major

The major in theatre arts has its focus upon those theatre students who wish to realize and develop their talent while at the same time relating it to broader knowledge.

At Marquette, the program in theatre arts offers intensive training in performance and/or production within a liberal arts foundation. Theatre arts students may select a minor from within the Diederich College of Communication such as advertising, broadcasting, public relations or communication studies. Instead, students may select a minor from the College of Business Administration (i.e. marketing) or the Klingler College of Arts and Sciences where they often elect a minor such as English, foreign language, psychology or political science.

Theatre arts majors have also found it beneficial to double major in any of the areas listed above, thereby obtaining a broad range of connections between the performing arts and other disciplines.

**Requirements for a Major:** A total of 41 credits of course work must be completed for the major in theatre arts:

### Required Courses

|                                   |  |     |
|-----------------------------------|--|-----|
| Complete a total of 3 credits of: |  | 3   |
| PEAR 2964                         | Performing Arts Practicum              |     |
| Additional requirements:          |  |     |
| THAR 1100                         | Acting 1: Fundamental Technique        | 3   |
| THAR 1300                         | Stagecraft                             | 3   |
| THAR 1310                         | Stagecraft Practicum                   | 0.5 |
| THAR 1320                         | Basic Costume Technology               | 3   |
| THAR 1330                         | Basic Costume Technology Practicum     | 0.5 |
| THAR 2140                         | Voice and Movement for Stage           | 3   |
| THAR 2400                         | Aspects of Theatrical Design           | 3   |
| THAR 2600                         | Play Analysis 1                        | 3   |
| THAR 3953                         | Career and Preparation Studies Seminar | 1   |
| THAR 4200                         | History of Theatre                     | 3   |
| THAR 4210                         | Contemporary Theatre                   | 3   |
| THAR 4240                         | History of Period Styles               | 3   |
| 9 hours of Theatre Arts electives |  | 9   |
| Total Credit Hours                |  | 41  |

The following courses are also required but do not count as hours in the major:



|           |                                   |   |
|-----------|-----------------------------------|---|
| ENGL 2720 | Introduction to Literature: Drama | 3 |
| ENGL 4630 | Shakespeare's Major Plays         | 3 |
| ENGL 4760 | British Drama                     | 3 |

**In addition to the required sequence, the following courses are strongly recommended for those students who wish to concentrate in a specific discipline within the performing arts:**

### **Performance**

|                          |   |     |
|--------------------------|---|-----|
| PEAR 2964                | Performing Arts Practicum (required)                              | 0.5 |
| THAR 1100                | Acting 1: Fundamental Technique (required)                        | 3   |
| THAR 1120                | Acting 2: Characterization  | 3   |
| THAR 1300                | Stagecraft (required)   | 3   |
| THAR 1320                | Basic Costume Technology (required)                               | 3   |
| THAR 1340                | Make-Up   | 3   |
| THAR 2100                | Acting 3: Advanced Scene Study                                    | 3   |
| THAR 2140                | Voice and Movement for Stage (required)                           | 3   |
| THAR 2160                | Voice and Speech 1  | 3   |
| THAR 2500                | Play Direction  | 3   |
| THAR 2600                | Play Analysis 1 (required)  | 3   |
| THAR 3100                | Acting 4: Shakespeare   | 3   |
| THAR 3953                | Career and Preparation Studies Seminar (required)                 | 1   |
| THAR 4100                | Acting 5: Professional Auditions and Career Preparation           | 3   |
| THAR 4200                | History of Theatre (required)                                     | 3   |
| DANC 2500                | Composition and Choreography                                      | 3   |
| DANC 3100                | Theatre Dance   | 3   |
| THAR 2140<br>& THAR 2160 | Voice and Movement for Stage<br>and Voice and Speech 1 (required) | 6   |

### **Directing**

|           |  |     |
|-----------|--|-----|
| PEAR 2964 | Performing Arts Practicum (required)       | 0.5 |
| THAR 1100 | Acting 1: Fundamental Technique (required) | 3   |
| THAR 1120 | Acting 2: Characterization                 | 3   |
| THAR 1300 | Stagecraft (required)                      | 3   |

|              |   |   |
|--------------|---|---|
| THAR 2140    | Voice and Movement for Stage (required)           | 3 |
| or THAR 2320 | Scenographic Techniques                           |   |
| THAR 2400    | Aspects of Theatrical Design (required)           | 3 |
| THAR 2500    | Play Direction                                    | 3 |
| THAR 2600    | Play Analysis 1 (required)                        | 3 |
| THAR 3953    | Career and Preparation Studies Seminar (required) | 1 |
| THAR 4200    | History of Theatre (required)                     | 3 |
| THAR 4360    | Theatre Management                                | 3 |
| THAR 4500    | Advanced Play Direction                           | 3 |

### Design/Technical

|           |   |     |
|-----------|---|-----|
| PEAR 2964 | Performing Arts Practicum (required)              | 0.5 |
| THAR 1100 | Acting 1: Fundamental Technique (required)        | 3   |
| THAR 1300 | Stagecraft (required)                             | 3   |
| THAR 1320 | Basic Costume Technology (required)               | 3   |
| THAR 2320 | Scenographic Techniques                           | 3   |
| THAR 2400 | Aspects of Theatrical Design (required)           | 3   |
| THAR 2500 | Play Direction                                    | 3   |
| THAR 2600 | Play Analysis 1 (required)                        | 3   |
| THAR 3953 | Career and Preparation Studies Seminar (required) | 1   |
| THAR 4200 | History of Theatre (required)                     | 3   |
| THAR 4360 | Theatre Management                                | 3   |
| THAR 4380 | Computer Applications for the Theatre             | 3   |
| THAR 4400 | Costume Design                                    | 3   |
| THAR 4420 | Lighting Design                                   | 3   |
| THAR 4440 | Scenery Design                                    | 3   |

**Participation in Theatre Productions:** All theatre arts majors and minors are required to audition for theatre productions and participate in a technical, design or management capacity. All university students are invited to audition for theatre productions or participate in a technical, design or management capacity. Students must have a minimum 2.000 GPA to participate in any production.

## Typical Program for Theatre Arts Majors

| Freshman                              |           |                                       |           |
|---------------------------------------|-----------|---------------------------------------|-----------|
| First Term                            | Hours     | Second Term                           | Hours     |
| CMST 1000                             | 3         | COMM 1200                             | 3         |
| ENGL 1001 (UCCS (R))                  | 3         | THAR 1120                             | 3         |
| Foreign language or UCCS (DC)         | 3-4       | THAR 1320                             | 3         |
| THAR 1100                             | 3         | THAR 1330                             | 0.5       |
| THAR 1300                             | 3         | Foreign language or UCCS (DC)         | 3-4       |
| THAR 1310                             | 0.5       | THEO 1001 (UCCS (T))                  | 3         |
|                                       | 15.5-16.5 |                                       | 15.5-16.5 |
| Sophomore                             |           |                                       |           |
| First Term                            | Hours     | Second Term                           | Hours     |
| COMM 1100 (UCCS (R))                  | 3         | COMM 2100 (or UCCS (DC)) <sup>+</sup> | 3         |
| COMM 2100 (or UCCS (DC)) <sup>+</sup> | 3         | COMM 2500                             | 3         |
| THAR 2140                             | 3         | ENGL 2720 (UCCS (LPA))                | 3         |
| PEAR 2964                             | 0.5       | PEAR 2964                             | 0.5       |
| THAR 2400                             | 3         | Major elective                        | 3         |
| UCCS (HCS)                            | 3         | UCCS (MR) or (SN)                     | 3         |
| UCCS (MR) or (SN)                     | 3         |                                       |           |
|                                       | 18.5      |                                       | 15.5      |
| Junior                                |           |                                       |           |
| First Term                            | Hours     | Second Term                           | Hours     |
| ENGL 4630 or 4760                     | 3         | PEAR 2964                             | 0.5       |
| PEAR 2964                             | 0.5       | PHIL 2310 (UCCS (HNE))                | 3         |
| PHIL 1001 (UCCS (HNE))                | 3         | THAR 4200                             | 3         |
| THAR 2600                             | 3         | THAR 4210 (or elective)               | 3         |
| THAR 3953                             | 1         | THAR 4240 (or elective)               | 3         |
| THAR 4240 (or elective)               | 3         | Minor                                 | 3         |
| UCCS (T)                              | 3         | UCCS (ISB)                            | 3         |
|                                       | 16.5      |                                       | 18.5      |

| <b>Senior</b>               |              |                         |              |
|-----------------------------|--------------|-------------------------|--------------|
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>      | <b>Hours</b> |
| PEAR 2964                   | 0.5          | PEAR 2964               | 0.5          |
| Minor/electives             | 15           | THAR 4210 (or elective) | 3            |
|                             |              | THAR 4997               | 3            |
|                             |              | Minor/electives         | 6-11         |
|                             | 15.5         |                         | 12.5-17.5    |
| Total credit hours: 128-135 |              |                         |              |

- \* COMM 2100 Introduction to Visual Communication cannot be used to fulfill the UCCS Literature/Performing Arts requirement.

## Wisconsin Teaching Licensure in Theatre Arts (Middle Childhood/Early Adolescence)

In addition to completing all requirements as specified by the College of Education, students must also complete all requirements listed under the theatre arts major.

## Wisconsin Teaching Licensure in Theatre Arts (Early Adolescence/Adolescence)

In addition to completing all requirements as specified by the College of Education as well as those listed under the theatre arts major, students seeking Wisconsin teaching licensure in speech communication at the early adolescence/adolescence level must also complete THAR 2500 Play Direction Play Direction and THAR 4360 Theatre Management Theatre Management both of which will count toward required electives in the theatre arts major.

## Theatre Arts Minor

### Required Courses

Complete a total of 2 credits of: 2

|                          |                                    |     |
|--------------------------|------------------------------------|-----|
| PEAR 2964                | Performing Arts Practicum          |     |
| Additional requirements: |                                    |     |
| THAR 1100                | Acting 1: Fundamental Technique    | 3   |
| THAR 1300                | Stagecraft                         | 3   |
| THAR 1310                | Stagecraft Practicum               | 0.5 |
| THAR 1320                | Basic Costume Technology           | 3   |
| THAR 1330                | Basic Costume Technology Practicum | 0.5 |
| THAR 2600                | Play Analysis 1                    | 3   |

|                    |                    |    |
|--------------------|--------------------|----|
| THAR 4200          | History of Theatre | 3  |
| Total Credit Hours |                    | 18 |

## Student Media

### Broadcast Operations

*MUTV* is a student-run, cable television station, which serves the campus community. The station is a co-curricular activity in the Diederich College of Communication. Student volunteers from all fields of study find experience in production, sales, promotion, management, news, sports, entertainment, and virtually every aspect of television. *MUTV* uses excellent facilities including two digital color studios and a computerized newsroom.

*Marquette Radio*, a student-run radio station, is webcast worldwide and broadcast on Time-Warner into residence halls, the Alumni Memorial Union and other campus buildings. *Marquette Radio* is a co-curricular activity in the Diederich College of Communication but it is staffed and managed by students representing many academic fields.

Students who participate in *Marquette Radio* gain experience in news production, announcing, public relations, advertising sales, management, record company relations and virtually every aspect of radio. The station broadcasts seven days a week during the academic year from its studios in Johnston Hall. The studios include a main broadcast studio, a news/production studio and a computerized newsroom.

A faculty adviser provides advice and assistance to students who participate in *MUTV* and *Marquette Radio*.

### Print Operations

The two student publications are run by students with advice and assistance from the publication adviser. The publications provide opportunities for students to participate in advertising, circulation and production functions.

*The Marquette Tribune*, published Tuesdays and Thursdays, is the university student newspaper. Its purpose is to publish the news of the university, to aid in the formation of opinion and to afford the students an opportunity for extended practice in newspaper editorial responsibility.

*The Marquette Journal* is the student magazine that aims to:

1. Serve as a publication for the expression of the undergraduates intellectual concerns, both artistic and scientific.
2. Foster effective expression and encourage initiative and responsibility among undergraduate students.
3. Afford students the opportunity for practice in magazine editing, writing, and production.

### Advertising Operations

Students sell advertising for all student media under the supervision of the advertising adviser.

## Facilities/Laboratories

### Centers for Communication Research (CCR)

Marquette University Centers for Communication Research is an umbrella organization that coordinates and fosters the growth of interdisciplinary communication research and research-related teaching and outreach activities among the associated faculty and centers throughout the university. The mission of the CCR is:

- To enhance the development of collaborative and interdisciplinary communication research programs at Marquette University.
- To advance the development of theoretically-based communication research and its integration with the important teaching and service activities of the university.
- To maintain an environment that encourages, respects and rewards faculty and student communication research efforts.
- To enhance the potential to identify and develop present and future research opportunities that blend theoretical, social and professional applications.
- To provide broad, centralized support for the centers and faculty associated with the CCR.

### Center for Mass Media Research

As part of the graduate program, the college operates the Center for Mass Media Research. Limited opportunities exist for juniors and seniors to participate in the work of the center as research clerks. Assistantships are reserved for students in the graduate program.

## Laboratories

Several laboratories are available to students in the Diederich College of Communication. These facilities include the following.

### Advanced Digital Laboratory

The J. William and Mary Diederich Advanced Digital Laboratory is a computing laboratory emphasizing design and visual communication. Each of the eighteen Macintosh lab stations has its own scanner and a full complement of software for visual production.

### Converged Broadcast News Laboratory

The Kay and Don McNeill Broadcast News Laboratory provides students with real-world resources to hone their broadcast writing, reporting and producing skills. The Associated Press News Wire and EZ News are used extensively for class-related and co-curricular activities including live news broadcasts by *MUTV* and *Marquette Radio*.

### Graphics Laboratories

Students use Mac workstations in two labs equipped with professional production software for publication editing, design and desktop publishing courses.

## **Multimedia and Broadcast Laboratories**

In-studio work employs two fully-equipped, digital color studios, video editing suites, audio studios, extensive computer graphics platforms (including facilities for animation), digital video effects, advanced interactive digital equipment, both audio and video field equipment, a radio station (*Marquette Radio*) and a TV station (*MUTV*) on campus. Mobile equipment is used to broadcast sporting events.

## **Reporting Laboratories**

Two reporting laboratories are equipped with personal computers, standard newsroom reference materials and Internet access.

## **Theatre and Dance Laboratories**

The Evan P. and Marion Helfaer Theatre provides an excellent theatre/teaching facility on campus. The structure includes a 226-seat theatre, with additional audience seating for the disabled; a proscenium stage; a scenery shop on stage level; multipurpose room for acting, directing and dance instruction; and production rooms: costume, light lab, make-up and dressing rooms. The 89-seat Straz Theatre provides additional classroom and performance space.

## **Wakerly Technology Training Center**

The Wakerly Technology Training Center provides a laboratory of up-to-date digital hardware, software and workspace appropriate for training as well as the development of multimedia projects. Individual students and teams typically work on class and community service projects. Web design, graphic layout, video and advertising campaign development are typical areas of project focus.

## **Student Lounge**

The new first floor lounge, "jPad," provides an open and digitally interactive place for students to study, collaborate, relax, have a coffee and meet with friends.



## Student Organizations

### Advertising Club

The purpose of the Marquette University Advertising Club is to promote better understanding of the functions of advertising, sales promotion and marketing communication; to stimulate and encourage advertising professionalism across the Marquette community through advertising education; to promote career possibilities in advertising; to apply the skills, creativity and energy of advertising in helping to solve social problems and to promote fellowship and the free exchange of ideas. The club is affiliated with the American Advertising Federation and the Business Marketing Association. Membership is open to all students interested in advertising, communication and marketing.

### College Student Council

The Diederich College of Communication Student Council integrates social and academic student activities across the college. The council provides opportunities in a wide variety of leadership positions.

### Debate Team

Debate is open to all interested undergraduate students and accommodates students with little or no academic debate experience as well as those with sufficient ability and experience to step immediately into national caliber competition. Debate is designed as an outlet for students who are interested in developing research and argumentation skills in a competitive environment. The debate team competes in tournaments on college and university campuses across the country.

### Honors Societies

#### Lambda Pi Eta

Lambda Pi Eta is an honorary society that also serves as a service organization to the college and local community. It is sponsored by the National Communication Association and honors outstanding full-time undergraduate students in communication studies. For eligibility, students are required to achieve a 3.250 GPA in their communication studies major or minor, a 3.000 overall GPA and have completed 12 credit hours in the major or minor. Benefits include the possibility of attending/participating in a regional communication conference and/or in the annual National Communication Association conference, as well as the privilege of being a member of the society.

#### Kappa Tau Alpha

A Marquette chapter of Kappa Tau Alpha, the national honor society for journalism and mass communication, was established at Marquette in 1929. Undergraduate students majoring in advertising, broadcast and electronic communication, journalism and public relations who are in the upper ten percent scholastically in their junior or senior year are eligible for membership. Graduate students in the upper ten percent scholastically in their group who have completed 12 hours in journalism or mass communication are also eligible for membership. Selections are made annually.

## **Marquette University Players**

The Marquette University Players invites participation by students from across the campus, regardless of major. Student members participate in studio productions each academic year.

## **Professional Societies**

### **Public Relations Student Society of America**

The Marquette University Public Relations Student Society of America (PRSSA) chapter provides students with a better understanding of public relations in a corporate as well as nonprofit setting. The club receives the professional guidance offered by the Wisconsin Chapter of Public Relations Society of America (PRSA). As members of the PRSSA, students are able to actively participate within the professional ranks through field trips and attendance at PRSA functions. Membership is open to all students interested in public relations.

### **Society of Professional Journalists**

The Marquette Chapter of the Society of Professional Journalists (SPJ) is affiliated with the national organization of SPJ and assists members in establishing professional journalism contacts, participating in professional meetings and activities and maintaining awareness of crucial issues in professional journalism.

# Course Descriptions

## Advertising Public Relations

### **ADPR 1400. Advertising Principles. 3 cr. hrs.**

An overview of advertising as it relates to marketing and mass media. The course examines the advertising industry, including advertisers, advertising media and ad agencies, advertising history, its social and economic effects, advertising law and ethical standards. Students are introduced to the advertising planning process: product, market and consumer research, creative and media strategy, production of messages and evaluation of advertising effectiveness.

### **ADPR 1800. Public Relations Principles. 3 cr. hrs.**

Principles, history, theory and practice of public relations in business, organizations and agencies. Analyses of public relations programs; the responsibility of the public relations practitioner to management and to relevant publics; ethics of public relations practice; the future of the field and career opportunities.

### **ADPR 2100. Digital Communication Design. 3 cr. hrs.**

Project-based course that develops multimedia communication design skills including digital photography and editing, digital asset management, digital storytelling, web communication design and emerging media design. Using a variety of computer and web-based tools, students develop key skills in a spiral - each project adds more challenging skills to foundation proficiencies. Students gain experience through real-world projects that help them better understand the roles and processes across a broad range of careers involving visual and multimedia design. Each project has phases that follow a design and development process, from project planning and analysis to evaluation and distribution. Prereq: Advertising major.

### **ADPR 2200. Media Writing. 3 cr. hrs.**

Factual and persuasive writing for the mass media. Introduction to and practice in newswriting, public relations writing and advertising copywriting. Basic information gathering. In-class writing exercises require use of computers. Prereq: ENGL 1001 and COMM 1100 or equiv.

### **ADPR 2400. Strategic Research and Planning for Advertising and Public Relations. 3 cr. hrs.**

Allows students to enhance their basic research skills by learning specific research practices in advertising and public relations research with attention to the planning process. Topics include: audiences, consumer insights, strategic messages, media, public opinion and account planning. Provides an opportunity for critique and practice of professional communication research. Prereq: ADPR 1400 or ADPR 1800 and COMM 2500.

### **ADPR 3200. Marketing Communications Design and Production. 3 cr. hrs.**

Fundamentals of marketing communications design focusing on advertisements, newsletters, brochures and posters. Students learn basic concepts and develop basic skills through planning, executing and evaluating effective designs. Prereq: ADPR 1400 or ADPR 1800; and restricted to declared CCOM majors and declared ADPR majors and minors.

### **ADPR 3400. Advertising Copywriting. 3 cr. hrs.**

Rigorous study and practice in planning and preparation of advertising messages. Emphasis on writing for all media. Artistic and scientific aspects of advertising creativity. Principles of creative strategy including: product/service research, target audience analysis, and selection of persuasive appeals and creative approaches. Evaluation of advertising effectiveness. Lecture/lab format. Prereq: ADPR 1400 and ADPR 2200 or JOUR 1100; and restricted to declared ADPR majors and minors.

**ADPR 3600. Public Relations Writing. 3 cr. hrs.**

The course covers the basics of public relations writing, including the principles of effective professional writing, finding and generating newsworthy information for print, electronic and "new" media. Topics covered include: news releases, fact sheets, brochures, online public relations, media kits, speech writing, crisis communication, and spokesperson training. Writing portfolios are assembled for purposes of future internships and employment. All classes held in a computerized writing laboratory. Prereq: ADPR 1800 and ADPR 2200 or JOUR 1100; and restricted to declared CCOM majors and declared ADPR majors and minors.

**ADPR 3800. Public Relations Strategies. 3 cr. hrs.**

Covers public relations theories and strategic planning processes and how they are applied to "read world" public relations cases and problems. Emphasis is on the role of strategic problem solving and public relations. Case study analysis is used to explore the effectiveness of PR strategies and expose students to a variety of PR applications (e.g., media relations, social media, internal communication, international promotion, investor relations, IMC). Students also learn and discuss ethical decision-making in various PR situations. Prereq: ADPR 1800; cons. of instr.; PURE major or minor.

**ADPR 3986. Internship in Advertising and Public Relations. 0-3 cr. hrs.**

Work experience in advertising or public relations in specific organizational settings, supervised by an approved professional coupled with related academic work assigned. Approval of departmental internship director required in advance of internship. May be taken more than once to a maximum of three total credits. Prereq: ADPR 2200 and ADPR 1400 and cons. of dept. ch.; or ADPR 1400 and JOUR 1100 and cons. of dept. ch.; or ADPR 2200 and ADPR 1800 and cons. of dept. ch.; or ADPR 1800 and JOUR 1100 and cons. of dept. ch. 0 credit will be SNC/UNC grade assessment; 1-3 credits will be S/U grade assessment.

**ADPR 4000. Sports Promotion. 3 cr. hrs.**

Examines how sport organizations attract fan attention and, ultimately, generate revenue by applying strategies and tactics related to public relations, advertising, marketing and sponsorship. Topics include: sport promotion techniques, media relations, new technology, special event planning, ethics of the field, professionalism and career opportunities. Students learn about the practitioner's responsibilities to society, client/organization, fans, media and other practitioner's. Prereq: ADPR 1400 or ADPR 1800 or cons. of instr.; Advertising and Public Relations majors or minors.

**ADPR 4100. Advertising Media Planning. 3 cr. hrs.**

Provides the skills for evaluating traditional and non-traditional media to strategically reach and influence target audiences and to fulfill specific advertising objectives. Explores the role of emerging media and its impact on the way advertisers communicate with consumers. Students develop media plans that apply the principles of scheduling and buying and incorporate the findings from primary and secondary research. Additional topics include: ethical forms of targeting, consumer motivations and economic trends. Prereq: ADPR 1400 and ADPR 2400; or cons. of instr.; and restricted to declared ADPR majors and minors.

**ADPR 4200. Business to Business Marketing Communication. 3 cr. hrs.**

Study of how businesses promote their goods and services to other businesses. Examines products, markets, objectives, strategies, media techniques and evaluation. Covers advertising, public relations, direct marketing and sales promotion. Includes case studies, outside speakers and field trips. Prereq: ADPR 1400; or ADPR 1800; or cons. of instr.; and restricted to declared ADPR majors and minors.

**ADPR 4300. Emerging and Social Media in a Dynamic Marketplace. 3 cr. hrs.**

Examines the strategic uses, impact and implications of emerging and social media. Addresses the need to adapt to a digital, networked marketplace where change is the rule rather than the exception. Expands student knowledge of emerging and social media and their application to advertising and public relations challenges. Students use this knowledge to find more strategic and effective ways to communicate with clients, publics, target markets and other stakeholders. Prereq: ADPR 1400 or ADPR 1800; or cons. of instr.; and restricted to declared ADPR majors and minors.

**ADPR 4400. Advanced Advertising Copywriting. 3 cr. hrs.**

A continuation of ADPR 3400. Emphasis on formulating strategy and producing executions for coordinated, multi-media campaigns. Each student will create a portfolio which will showcase his or her talent and ability to work as a professional copywriter. Prereq: ADPR 3400; or cons. of instr.; and restricted to declared ADPR majors and minors.

**ADPR 4500. Advertising and Public Relations Account Management. 3 cr. hrs.**

The fundamentals of management in both the client and agency environments. Analyzes client and agency structures and functions. Explores project estimating, budgeting and time management. Examines account profitability maintenance and account team productivity. Reviews techniques for agency and supplier selection. Special emphasis on the ethical aspects of account work. Prereq: ADPR 1400 or ADPR 1800; or cons. of instr.; and restricted to declared ADPR majors and minors.

**ADPR 4600. Multicultural and International Advertising and Public Relations. 3 cr. hrs.**

This course develops knowledge and enhances skills necessary for advertising and public relations professionals for communication with diverse audiences. Topics include the role of culture, unique characteristics of groups, and effective strategies when communicating with multicultural audiences within the U.S. Students also learn to navigate the cultural, regulatory, and media environment for effective communication with audiences in countries outside the U.S. Prereq: ADPR 1400 or ADPR 1800 or cons. of instr.

**ADPR 4700. Cultural Identity, Media and World Religions. 3 cr. hrs.**

Framed through a media lens, this seminar studies the diversity of ethnic and spiritual beliefs that make America multicultural and religiously pluralistic. The course examines manifestations of religion in print and electronic news, advertising and public relations, the uses of media by religious groups, and bias and prejudice about religion in the secular media, and bias about secularism in religious media. The course deconstructs consumer and material culture, and offers a critique of cultural consumption based on philosophies embedded in world religions. A variety of media will be used in instruction. Prereq: Soph. stndg.

**ADPR 4800. Advanced Public Relations Writing. 3 cr. hrs.**

Designed to advance the writing and production skills developed in PURE 3600: Public Relations Writing. Applies PR strategies and theories to writing for specific stakeholders in a variety of PR situations. Emphasis is on clear, concise messages for strategic and persuasive communication in multimedia formats such as print, audio, visual, web-based and social media. In addition to developing thorough knowledge of the various formats used in creating traditional PR materials, student also plan and execute specialized forms of writing such as annual reports, white papers, op-ed articles and sponsorship/fundraising proposals. Assignments contribute to professional portfolio development. Prereq: ADPR 1800, ADPR 3600 or cons. of instr. Restricted to declared PURE majors and minors.

**ADPR 4951. MU Led Travel/Study Abroad. 3 cr. hrs.**

Designed to bring advertising and culture to life within the context of the global marketplace. Students spend three weeks in both London and Prague, visit local and multinational advertising agencies and media companies, and experience local culture. Course taught in an international setting by Marquette professors and where students earn Marquette credit. Study Abroad expenses apply. Prereq: Jr. stndg., cons. of instr., and one of the following courses: ADPR 1400, ADPR 1800, or CCOM 2000.

**ADPR 4953. Seminar in Advertising and Public Relations. 1-3 cr. hr.**

Specific subjects of seminars to be announced in the Schedule of Classes. Variable topics. Prereq: Restricted to declared ADPR majors and minors.

**ADPR 4961. Special Institute/Workshop/Project. 1-3 cr. hr.**

Prereq: Restricted to declared ADPR majors and minors.

**ADPR 4995. Independent Study in Advertising and Public Relations. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

**ADPR 4999. Senior Thesis. 1-3 cr. hr.**

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Prereq: Cons. of dept. ch.

## Advertising

**ADVE 4997. Advertising Campaigns. 3 cr. hrs.**

Senior capstone course in integrated advertising campaign planning. Students working in groups, plan and develop advertising campaigns for real world advertisers. Campaigns include research, objective setting, strategy, media selection, message preparation, sales promotion and public relations, and budgets. Project culminates in formal, competitive presentations. Prereq: ADPR 3400 and ADPR 4100; or cons. of instr.; and restricted to declared ADPR majors and minors.

## Broadcast Electronic Comm

**BREC 1964. Practicum in Student Broadcasting. 1 cr. hr.**

Students receive hands-on experience at the student-run radio and television stations, MUR and MUTV. Guided by their interests, students will be able to experience one or more departments including news, production, promotion, programming, etc. Students are also introduced to career options within the electronic media industries and are expected to perform critical analyses of new media formats, including the Web. S/U grade assessment.

**BREC 2205. Production Techniques. 3 cr. hrs.**

Basic audio and video production and post-production techniques used in radio, television, cable, corporate media and online.

**BREC 2250. Video Production. 3 cr. hrs.**

Practical application of the theories of television and video production and post-production. Emphasis on creative field and in-studio productions and client productions. Students develop directing skills and video editing techniques and use these skills to create content to be distributed to a variety of channels ranging from television to online. Prereq: BREC 2205 and BREC 2335; or BREC 2205 and BREC 2445.

**BREC 2335. Script and Continuity. 3 cr. hrs.**

Students learn to write in the proper script style for a variety of broadcast, video, Web and film formats. Practice in aural writing techniques with an emphasis on form and content. Prereq: ENGL 1001 and COMM 1100 or equiv.

**BREC 2445. Multimedia News 1. 3 cr. hrs.**

Students learn to write news stories for distribution across a range of media outlets and are introduced to the process of creating digital still photography. Students learn to gather, analyze and report news information. These practices are situated within the contexts of civic affairs and socially responsible journalism. Prereq: ENGL 1001 and COMM 1100 or equiv.

**BREC 2555. Corporate Media. 3 cr. hrs.**

Analysis and practice in the development, acquisition and utilization of electronic media in the corporate world. Emphasis on problems of budget, audience, objectives, evaluation and production as encountered in corporate media communication.

**BREC 2565. The Business of Entertainment. 3 cr. hrs.**

Students receive a thorough grounding in the financial processes and economies in the industry to better understand the basic business and operational framework of film and television. Topics covered range from project development and product distribution and forward funding future projects.

**BREC 2610. Program Development. 3 cr. hrs.**

Planning and development of programs for specialized audience and objectives. Preparation of program layouts for television, cable, and corporate systems.

**BREC 2710. Sound Design. 3 cr. hrs.**

Aesthetics of audio mixing in various program genres (drama, commercial, documentary, interviewing, feature, etc.) utilizing stereo and multi-track consoles and digital effects devices and workstations. Prereq: BREC 2250; or cons. of instr.

**BREC 3460. Multimedia News 2. 3 cr. hrs.**

Students practice writing news stories for distribution across a range of media outlets and learn the process of gathering, editing and reporting in an audio format, as well as basic web design. These practices are situated within the contexts of civic affairs and socially responsible journalism. Prereq: BREC 2205 and BREC 2445.

**BREC 3510. Broadcast Sales and Promotion. 3 cr. hrs.**

Methods, organization, compensation, and administration of sales and promotion activities. Motivational and organizational techniques; methods of selling and alternative approaches to market, product, and media analysis. Case study approach.

**BREC 3900. Public Policy in Telecommunications. 3 cr. hrs.**

Analysis of the public policy process and its impact on the development of media and telecommunications systems. Emphasis on current policy issues relating to content, economics, technological change, and social effects.

**BREC 3964. Practicum in Student Media. 1-3 cr. hr.**

Students who work for MUR or MUTV not only gain valuable hands-on experience, but can receive credit. Depending on the hours worked per semester, students earn 1-3 credits. Students earning less than 3 credits can repeat the practicum for a total of 3 credits. S/U grade assessment. Prereq: Cons. of Dept, ch. or media director.

**BREC 3986. Internship in Broadcast and Electronic Communication. 0-1 cr. hrs.**

Observation, participation, and experience in a radio, television, cable, or corporate setting. Augmented with selected readings, papers or conferences with adviser. 0 credit will be SNC/ UNC grade assessment; 1 credit will be S/U grade assessment. Prereq: Cons. of dept. ch.

**BREC 4240. Television Performance. 3 cr. hrs.**

Application of performance techniques to the television medium. Extensive in-studio practice. Concentration on performance in television commercials, news anchoring, interviewing, and possible role-playing in comedy and dramatic scripts.

**BREC 4275. Advanced Television Production and Direction. 3 cr. hrs.**

Development of program-length dramatic and non-dramatic productions for television, cable, educational, and corporate distribution. Particular attention to the integration of the various media used in television production and to legal and financial considerations. Prereq: BREC 2250.

**BREC 4345. Advanced Scriptwriting. 3 cr. hrs.**

Development and writing of full-length scripts for entertainment television or feature film. Includes development of concepts for new television series, miniseries, and movies-for-television, and study of their specific writing requirements, as well as writing for current television series. Writing workshop approach.

**BREC 4440. Multimedia News 3. 3 cr. hrs.**

Students learn the process of shooting and editing video for use in news stories. Students practice writing news stories for a variety of media distribution outlets. Students gather, analyze and report news within the context of socially responsible journalism. Prereq: BREC 2205 and BREC 3460.

**BREC 4615. Radio Programming. 3 cr. hrs.**

Examination and case study analysis of the contemporary radio industry. Emphasis on music formats, news, talk, sports, syndication, and other sources of program material. Audience demographics, profiles, ratings, and promotions. Practical experience in applying for FCC license.

**BREC 4620. Television Programming. 3 cr. hrs.**

Analysis of television programming theories. Includes data-based criticisms of different programming strategies. Primary emphasis on prime-time network entertainment programming; includes consideration of effective programming for other "day parts" and news. Students will program their own network on the basis of theories and data provided.

**BREC 4810. American Television: 1946-Present. 3 cr. hrs.**

Historical, cultural and commercial growth of American television, with special emphasis on programming, from pre-commercial beginnings to the present. Key genres, persons, issues and trends in the development of American prime-time television.

**BREC 4830. Early History of Broadcasting. 3 cr. hrs.**

History of the American system of broadcasting from its inception to approximately 1950. Examination of the technological, social, cultural, economic and political forces which shaped the industry. Emphasis on the roles of the broadcasters as agencies of information and entertainment by an analysis of trends in radio and early television programming.

**BREC 4840. Film and TV Aesthetics. 3 cr. hrs.**

An analytical examination of film and television aesthetics, focusing on historical influences on contemporary trends. Studies of aesthetic theories are used to analyze movies and television shows with not only a critical eye, but also from a director's perspective.

**BREC 4850. Television Criticism. 3 cr. hrs.**

Examination of the major critical approaches which have historically been applied to television programming. Study of major television critics whose work appears in academic publications and the mass media.

**BREC 4855. Communication and Social Issues of the Internet. 3 cr. hrs.**

Examines the ways in which online communication impacts the daily lives of our society and its individual members. Particular attention is given to the use of online communication to build community and social life and to the ways in which online communication is similar to or different from other forms of mediated communication. Culminates with the presentation of a major original research project.

**BREC 4910. Technology and Learning. 3 cr. hrs.**

Learning theories applied to design, use and evaluation of electronic communication technologies in instructional settings. Prereq: Jr. stndg. and BREC 2205 and BREC 2335; or Jr. stndg. and BREC 2205 and BREC 2445; or cons. of instr.



**BREC 4920. Multi-Media Authoring. 3 cr. hrs.**

Study of electronic media within the context of training/learning systems. Multi-media authoring software used to design, produce and evaluate instructional lessons. Prereq: Jr. stdng. and BREC 4910; or cons. of instr.

**BREC 4931. Topics in Broadcast and Electronic Communication. 1-3 cr. hr.**

Various topics in broadcast and electronic communication to be announced in the Schedule of Classes. Includes extensive screening and/or other activities. Lecture/lab format.

**BREC 4953. Seminar in Broadcast and Electronic Communication:. 1-3 cr. hr.**

Special subjects of seminar to be announced in the Schedule of Classes. Variable topics.

**BREC 4961. Special Institute/Workshop/Project. 1-3 cr. hr.****BREC 4995. Independent Study in Broadcast and Electronic Communication. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

**BREC 4997. Senior Capstone. 2 cr. hrs.**

In order to demonstrate professional proficiency, students will create a media project designed to meet a community need. They will prepare a case study evaluating relevant scholarly research, ethical and legal implications. Discussion of career alternatives and preparation of resume and supporting materials. Prereq: BREC major, Sr. stdng.

**BREC 4999. Senior Thesis. 1-3 cr. hr.**

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Prereq: Cons. of dept. ch.

**Corporate Communication****CCOM 2000. Issues in Corporate Communication. 3 cr. hrs.**

Offers an introduction to contemporary issues in corporate communication. Traces the history of the corporation and examines its relationship to contemporary issues in society. Explores concepts such as corporate voice, corporate identity construction, mission and branding. Considers the way in which communication is vital to both the day-to-day operations of the corporation and the corporation's ability to achieve its overall mission.

**CCOM 3250. Corporate Writing. 3 cr. hrs.**

Takes a practical and analytical approach to the development of content and style in corporate communication. Emphasis on the development of effective writing skills for clear, concise and audience-centered business documents. Additional focus on correct communication in corporate practice as related to corporate image and identity. Prereq: CCOM 2000 and ADPR 2200; or cons. of instr.

**CCOM 3750. Corporate Rhetoric. 3 cr. hrs.**

Emphasizes the development of messages that target multiple stakeholder groups by making strategic choices of available communication media and channels. Includes a focus on audience analysis and selection of appropriate media. Students will learn to design messages that help corporations enact specific strategies to meet corporate objectives. Prereq: CCOM 2000.

**CCOM 4750. Corporate Social Responsibility. 3 cr. hrs.**

Analyzes the range of public debates about the social responsibilities of corporations. Key questions explored in this integrative, capstone-type course include the following: What sorts of public communication practices are commonly taken to hinder or promote corporate social responsibility? What are the ethical implications for civic life of corporations' internal communication practices? How do corporations manage their ethical relations with communities, nongovernmental organizations and other stakeholders? What sorts of groups have historically participated in public controversies over corporate social responsibility? Prereq: CCOM 2000; SR. stdng. or cons. of dept. chair.

**CCOM 4931. Topics in Corporate Communication. 3 cr. hrs.**

Focuses on a specific topic in Corporate Communication each term. Prereq: CCOM 2000.

**CCOM 4986. Corporate Communication Internship. 0-3 cr. hrs.**

Provides students with the opportunity to apply theories, skills and techniques in a real-world corporate communication setting. 0 credit will be SNC/UNC grade assessment; 1-3 credits will be S/U grade assessment. Prereq: CCOM 2000 and cons. of dept. chair.

**CCOM 4995. Independent Study in Corporate Communication. 1-3 cr. hr.**

Independent study with a faculty member centered on a particular topic in corporate communication. Prereq: CCOM 2000, CCOM 3250.

## Communication Studies

**CMST 1000. Introduction to Communication. 3 cr. hrs.**

A survey of communication principles and processes as they relate to interpersonal communication, small group communication, culture and communication, persuasion, communication in organizations, and mediated communication.

**CMST 1300. Public Speaking. 2 cr. hrs.**

Examines theory and practice of effective public speaking. The course includes informative, persuasive, and occasional speaking. Criticism and critical listening skills will also be emphasized.

**CMST 2000. Introduction to Small Group Communication. 3 cr. hrs.**

Examines theories, principles and methods of small group communication. The course will focus on such topics as: leadership, problem solving, roles, norms, and climate. The class takes a systems approach to groups and students will have hands-on experience in a decision making group.

**CMST 2010. Communication Approaches to Interviewing. 3 cr. hrs.**

Stresses communication theory and current research related to interviewing. Provides in-class practice with interchanging roles as interviewer/interviewee in several types of interviews. Current research in interviewing techniques, assistance in resume preparation and legal guidelines for questions are among the topics for discussion.

**CMST 2100. Interpersonal Communication. 3 cr. hrs.**

Examines person-to-person communication with a focus on such topics as social roles, conflict management, relationship development, perception, communication effectiveness and relevant theories. Prereq: CMST 1000.

**CMST 2300. Business Communication. 2 cr. hrs.**

Provides students with the opportunity to explore and develop the presentation skills necessary for success within the context of business through a study of communication and theory. Includes informative, persuasive, and small group presentations, as well as an emphasis on critical thinking, listening, non-verbal and technological presentation skills. Students may not receive credit for both CMST 2300 and CMST 1300. Prereq: Soph. Stndg. and enrolled in College of Business.

**CMST 2310. Argument in Contemporary Society. 3 cr. hrs.**

Explores the role of argument in contemporary society. Includes analysis and application of various theories of public argumentation. Areas include identification of fallacies, refutation, forms of argument, and formal and informal logic.

**CMST 2600. Foundations of Communication Studies. 3 cr. hrs.**

Surveys major theoretical approaches to communication studies, reviews the history of the discipline and introduces students to basic research methods in the field.

**CMST 2800. Debate/Forensic Practicum. 1-2 cr. hr.**

Students participate in intercollegiate debate and/or individual events and travel to various tournaments. A maximum of 2 credits can apply towards graduation.

**CMST 3100. Communication and Conflict. 3 cr. hrs.**

Communication and conflict explores theoretical and experiential avenues to conflict management, resolution, and regulation through communication styles and methods. The communicative contexts for investigation are interpersonal and organizational (profit and non-profit). Exercises and case studies provide an opportunity to implement theoretical learning from the course.

**CMST 3200. Organizational Communication. 3 cr. hrs.**

Presents historical and current perspectives on the origins and usefulness of organizational theories as they relate to communication issues. Emphasizes the relationship between organizational life and communication principles. Ultimate goals, assumptions, and cases relating to organizational communication theories are developed and discussed.

**CMST 3210. Business and Professional Presentations. 3 cr. hrs.**

Explores and offers practice in the types of oral communication faced in organizational settings. The emphasis is on creation, development, and delivery of professional presentations building on persuasion and informative speaking skills.

**CMST 3240. Diffusion of Innovations: The Role of Communication in Technological Change. 3 cr. hrs.**

Introduces the role communication plays in the spread of new ideas through social systems. By investigating the variables that influence the diffusion process, students will learn how to assess and proactively affect change processes.

**CMST 3300. Persuasion. 3 cr. hrs.**

Surveys theories, principles, and practices of persuasion. Special emphasis on the social, psychological and cultural study of influence. Prereq: CMST 1000.

**CMST 3310. Ethics in Human Communication. 3 cr. hrs.**

Explores theoretical and practical ethical questions of importance to responsible communicators in personal and public contexts. Discussion of ethical theories in communication studies will provide an opportunity to explore case studies and contemporary communication dilemmas critically, while heightening personal sensitivity to the underlying ethical implications of human communication.

**CMST 3340. Classical Rhetorical Theory. 3 cr. hrs.**

Analyzes Greek and Roman rhetorical theory from the rise of the early sophists in Greece to rhetoric's decline in the early Christian era. Special emphasis on Plato, Aristotle, Cicero, and Quintilian. Prereq: CMST 1000 and CMST 3300; or cons. of instr.

**CMST 3350. Modern Rhetorical Theory and Criticism. 3 cr. hrs.**

Discusses contemporary theoretical and critical approaches to the description, analysis, interpretation, and evaluation of public discourse. Examines and applies principles established by such theorists as Kenneth Burke, Ernest G. Bormann, Chaim Perelman, and Stephen Toulmin, among others. Prereq: CMST 1000 and CMST 3300; or cons. of instr.

**CMST 3410. Intercultural Communication. 3 cr. hrs.**

Examines the influence of culture on communication within Europe, Asia, Latin America, and Africa. International in scope, the course also analyzes communication between people from different national cultures and provides an analytical framework for dissecting intercultural exchanges.

**CMST 3800. Communication and the Legal Process. 3 cr. hrs.**

This course focuses on the role of communication in the American legal system. The course is designed to acquaint students with the various dimensions of communication in the practice of law with a particular emphasis on the trial process.

**CMST 4110. Family Communication. 3 cr. hrs.**

Introduces communication phenomena in the family setting. Examines how communication affects the development, maintenance, and enhancement of family relations.

**CMST 4120. Gender and Communication. 3 cr. hrs.**

Examines the relationship between gender and communication. Includes discussion of verbal and nonverbal communication patterns of males and females, various explanations for these patterns, perceptions of gender differences and the implications these perceptions have for people in several contexts (public, interpersonal, and organizational).

**CMST 4130. Communication and Urban Families. 3 cr. hrs.**

This course investigates communication about urban families, the communication links between urban families and institutions, and communication practices within urban families. The course emphasizes the diversity among urban families as well as the stressors and strengths found in the urban context. Prereq: CMST 1000.

**CMST 4220. Communication Approaches to Training and Development. 3 cr. hrs.**

Emphasizes development of training sessions within organizations. Diagnostic methods for assessing needs and determining the utility of specific training are explored. Roles of consultant, in-house human resource trainer, and liaison with subject matter experts are differentiated. Students develop training modules for communication skills training.

**CMST 4230. Managerial Communication. 3 cr. hrs.**

The communication relationship between managers and employees involves a set of circumstances not often found in everyday communication with friends and colleagues. The differences in power, knowledge, job description, and life experiences create many unique and challenging interactions. This course looks in-depth at the circumstances which affect communication between managers and their employees as well as at a number of theories and strategies for improving communication in the workplace.

**CMST 4250. Leadership and Communication. 3 cr. hrs.**

Explores communication variables involved when leaders attempt to influence members to achieve a goal. Topics include: power, credibility, motivation, research on leader traits, styles and situations, and current models of leadership such as transactional, transformational, charismatic, and functional approaches. The different leadership challenges posed by community and institutional settings will also be explored. Prereq: CMST 3200 or cons. of instr.

**CMST 4260. New Communication Technologies in the Workplace. 3 cr. hrs.**

Presents a historical and theoretical review of the impact of new communication technologies on organizations and their membership. Focuses on the organizational, social and communicative implications of new communication technologies across a broad range of contexts in the organizational setting, including: interpersonal, groups and teams, management, and technological innovations. Includes some special topics particularly relevant to new communication technologies including: anonymity, privacy and surveillance, and technology apprehension. Prereq: CMST 3200 or cons. of instr.

**CMST 4270. Communicating in Multinational Organizations. 3 cr. hrs.**

Examines the influence of culture on communication in organizations. Global comparisons in organizational communication are offered including analysis of European, Asian, and Latin American corporate cultures. Intercultural communication in U.S. organizations is also explored.

**CMST 4320. Philosophy of Communication. 3 cr. hrs.**

This course outlines foundational theories and concepts regarding rhetoric's contribution to our understanding of reality, knowledge, truth, and certainty. Topics include: the role of rhetoric in the construction of our knowledge of science, politics, ethics, religion, law, gender, and culture.

**CMST 4330. Freedom of Speech. 3 cr. hrs.**

Examines definitions, issues, problems, and requirements for protecting or curbing free expression of speech in areas such as defamation and invasion of privacy; religious-moral heresy; provocation to anger; commercial speech; time, place, manner and institutional constraints; and prior restraint. Analysis of landmark cases and contemporary public arguments.

**CMST 4360. Rhetoric of Social Movements. 3 cr. hrs.**

Examines the rhetoric of social change and methodologies for analysis and appraisal of social movement discourse. Rhetorical strategies will be traced through contemporary movements including: civil rights, feminism, Native American, anti-nuclear, abortion, gun control, Ku Klux Klan, and others. Prereq: CMST 1000 and CMST 3300; or cons. of instr.

**CMST 4400. Cross-Cultural Communication in the United States. 3 cr. hrs.**

Explores the dynamics of cross-cultural communication in the U.S. and obstacles to effective interaction across American co-cultures. Examines the interpersonal patterns of selected ethnic groups, races, religions, and social classes in the U.S. with the aim of improving cross-cultural understanding and communication.

**CMST 4500. Health Communication. 3 cr. hrs.**

Provides an introduction to the field of health communication. This course examines the role of communication in health care with a focus on provider training and the provider-patient relationship. Theoretical models for developing effective health communication programs are discussed and applied within a variety of health care settings.

**CMST 4600. Communication Consulting. 3 cr. hrs.**

Students are introduced to communication consulting and the design implementation of communication audits for corporate and non-profit settings. Surveys various models of consulting. Students learn to design and implement a communication audit that includes needs assessment, interpretation, and recommendations. Methods of audits include survey design, interviews and focus groups. Prereq: CMST 1000, and CMST 3200; or cons. of instr.

**CMST 4810. Directing Speech Activities. 3 cr. hrs.**

Theory and practice in the organization and management of co-curricular speech activities in high school and college.

**CMST 4953. Seminar in Communication Studies. 1-3 cr. hr.**

Special subjects of seminar to be announced in the Schedule of Classes. Variable topics.

**CMST 4961. Special Institute/Workshop/Project in Communication Studies. 1-3 cr. hr.****CMST 4986. Internship in Communication Studies. 1-3 cr. hr.**

Internship in Communication Studies provides students with the opportunity to apply theories, skills, and techniques in communication as believed appropriate within specific organizational settings. S/U grade assessment. Prereq: CMST 1000 and CMST 2000 and CMST 2310 and cons. of dept. ch.; plus three upper division CMST credits.

**CMST 4995. Independent Study in Communication Studies. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

**CMST 4997. Communication and Contemporary Issues. 3 cr. hrs.**

A capstone experience for Communication Studies majors. Examines communication theories and principles in the context of contemporary events and social issues. Students conduct original communication research and apply theories to specific communication contexts and practices. Prereq: Must have completed at least 24 credit hours in the CMST major.

**CMST 4999. Senior Thesis. 1-3 cr. hr.**

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Prereq: Cons. of dept. ch.

## Communication

**COMM 1100. Contemporary Presentation. 3 cr. hrs.**

Principles and extended practice of rhetorical elements of written and oral presentation. Individual work in various essay and oral forms; group presentation; and use of presentation software. Essays of definition, comparison and contrast, process, and summary; oral presentation in introductory, expository, persuasive and ceremonial forms. 3 hrs. lec., disc. Prereq: ENGL 1001.

**COMM 1200. Media in Society. 3 cr. hrs.**

Surveys the historical, economic and cultural development of the mass media in America. Introduces the theoretic approaches utilized to understand the media's role in society.

**COMM 2100. Introduction to Visual Communication. 3 cr. hrs.**

Broad in scope, this course is an introduction to visual communication. Not discipline-oriented, the course focuses on the principles and elements of visual communication. Through application of language and principles, students learn to analyze and address 2D and 3D visual communication problems. 3 hrs. lec., disc.

**COMM 2500. Introduction to Communication Research Methods. 3 cr. hrs.**

Introduces students to the systematic process of asking and answering questions associated with communication inquiry. Various quantitative and qualitative methodologies will be explored which will enable students to design, conduct, interpret and evaluate research more critically. Prereq: CMST 1000, COMM 1200 and Soph. stndg. or cons. of instr.

**COMM 3800. Media Law. 3 cr. hrs.**

Legal standards/doctrines governing libel, privacy and other areas of law directly affecting the media. Special consideration of legal problems in advertising, broadcast and electronic communication, journalism and public relations. Emphasis on the constitutional protection of freedom of expression and the media. Analysis of how these standards, doctrines and constitutional procedures affect the work of media professionals. Prereq: Jr. stndg.

**COMM 3900. Ethical Problems of Mass Communications. 3 cr. hrs.**

The practice of journalism and mass communications as ordered by moral principles. Prereq: Jr. stndg. and PHIL 2310.

**COMM 4100. Mass Media and the American Family. 3 cr. hrs.**

The impact of the mass media on family communication patterns, familial value structures, development of children, and orientation to news media. Examination of news, advertising, and entertainment content from educational, cultural and economic perspectives. Emphasis on empirical social science research which examines relationships between media and families. Prereq: Jr. stndg.

**COMM 4200. International Communication. 3 cr. hrs.**

History of the comparison among present structures of national media systems and the role of journalism within them. Principles of international news flow, gatekeeping, impact of technology, and the relationship between developing countries. Exploration of various models of press-government relationships. Prereq: Jr. stndg.

**COMM 4300. Survey Research and Reasoning for Communication Professionals. 3 cr. hrs.**

Covers how to conduct, understand, interpret and communicate the results of political polls and other forms of sample surveys used in the media. Includes an introduction to data analysis and related reasoning, principles and techniques of sampling, questionnaire construction for various platforms (e.g. online, telephone, mail), the verbal and visual presentation of results for various audiences and ethical consideration. Prereq: Jr. stndg. or cons. of instr.

**COMM 4400. Mass Communication Theory and Research. 3 cr. hrs.**

Theoretical and methodological considerations involved in mass media research. Examines quantitative and qualitative approaches within the context of the media as social institutions. Prereq: Jr. stndg; or cons. of instr.

**COMM 4500. Race and Gender Issues in Mass Media. 3 cr. hrs.**

Surveys the past and present relationship between women and racial and ethnic minorities in the United States and the mass media. Specifically, the issues of how women and people of color are portrayed in the news and entertainment media, the role of ownership, employment and access to the media institutions will be studied. Women's Studies elective. Prereq: Jr. stndg.

**COMM 4600. Media Management. 3 cr. hrs.**

Staffing, organization, economics, salaries, law, labor negotiations and community relations as involved in the mass media. Theoretical and practical approaches to the problems of management.

**COMM 4700. Media and Politics. 3 cr. hrs.**

How the news media cover politics and how politicians deal with news coverage. Emphasis is on recent presidential campaigns, with special attention to ethical issues, the impact of new media, campaign advertising and strategies used by politicians and journalists. Prereq: Jr. stndg. and POSC 2201.

**COMM 4951. Marquette Led Travel and Study Abroad. 3 cr. hrs.**

Course taught in an international setting by Marquette professors and where students earn Marquette credit. Study Abroad expenses apply.

**COMM 4953. Seminar in Communication. 1-3 cr. hr.**

Special topics of seminar to be announced in the Schedule of Classes. Variable topics.

**COMM 4961. Special Institute/Workshop/Project. 0-3 cr. hrs.**

0 credit will be SNC/UNC grade assessment; 1-3 credits will be graded.

**COMM 4986. Internship in Communication. 0-3 cr. hrs.**

Provides students with the opportunity to apply theories, skills, and techniques in communication. Prereq: Cons. of dept. ch.; cons. of associate dean. 0 credit will be SNC/UNC grade assessment; 1-3 credits will be S/U grade assessment.

**COMM 4995. Independent Study in Communications. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

**COMM 4999. Senior Thesis. 1-3 cr. hr.**

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Prereq: Cons. of dept. ch.

**Dance****DANC 1100. Disciplines of Movement. 2 cr. hrs.**

Introduction to movement disciplines like Alexander, Feldenkrais, and Tai Chi for performers. Training geared toward relaxation, loss of inhibition, and ease of flexibility. Prereq: THAR major or THAR minor or cons. of instr.



**DANC 2020. Ballet 1. 3 cr. hrs.**

Emphasis placed on beginning ballet and classical dance techniques. No previous dance experience required.

**DANC 2040. Ballet 2. 3 cr. hrs.**

Emphasis will be placed on intermediate ballet dance techniques. Explores the influence of ballet and classical dance techniques on a range of other dance forms. Prereq: DANC 2020 or cons. of instr.

**DANC 2120. Modern Dance 1. 3 cr. hrs.**

Emphasis will be placed on fundamental modern dance techniques. No previous dance needed. Offered fall term.

**DANC 2140. Modern Dance 2. 3 cr. hrs.**

Emphasis will be placed on intermediate modern dance techniques. Explores influences of other dance forms as used in modern dance. Also explores the influence of modern dance techniques on a range of other dance techniques. Prereq: DANC 2120 or cons. of instr.

**DANC 2220. African Dance 1. 3 cr. hrs.**

Emphasis will be placed on fundamental African Dance techniques. No previous dance needed.

**DANC 2240. African Dance 2. 3 cr. hrs.**

Emphasis will be placed on Intermediate African Dance techniques. Continues exploration of dance forms in the tradition of the African Diaspora. Explores the use of live drummer interaction with dance form. Prereq: DANC 2220 or cons. of instr.

**DANC 2420. Tap Dance 1. 3 cr. hrs.**

Emphasis will be placed on fundamental tap dance techniques. No previous tap dance needed.

**DANC 2440. Tap Dance 2. 3 cr. hrs.**

Continuation of DANC 2420. Prereq: DANC 2420 or equiv.

**DANC 2500. Composition and Choreography. 3 cr. hrs.**

The examination of the composition of dance forms and structures from a dance/movement perspective. Introduces choreography techniques. Prereq: DANC 2020, or DANC 2120, or DANC 2220 or DANC 2420; or cons. of instr.

**DANC 3100. Theatre Dance. 3 cr. hrs.**

Basic musical theatre dance techniques for actors and dancers. Movement and dance training geared toward developing an individual's movement potential to its fullest ideal. A study of various techniques of musical comedy dance and traditional dance forms.

**DANC 4500. Dance History. 3 cr. hrs.**

Survey of dance history with particular emphasis paid to development of major styles of dance and dance achievements. Class includes movement and technique component. Prereq: Prereq: DANC 2020, or DANC 2120, or DANC 2220 or DANC 2420; or cons. of instr.

**DANC 4953. Seminar in Dance. 1-3 cr. hr.**

Specific subjects of seminars to be announced in the Schedule of Classes. Variable topics.

**DANC 4995. Independent Study in Dance. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

**DANC 4999. Senior Thesis. 1-3 cr. hr.**

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Prereq: Cons. of dept. ch.



## Fine Arts

### **FIAR 1000. Observational Drawing 1. 3 cr. hrs.**

A one-term course in which students meet twice weekly and will be introduced to the visual language of drawing. How the parts of the drawing relate to each other and to the composition as a whole is explored while each student strives to develop skills using traditional black-and-white media. One-half of the course places primary emphasis on depicting the human form; the other half places emphasis on depicting objects in space. Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [F100].

### **FIAR 1100. Visual Dynamics 1: Concept, Process and Composition. 3 cr. hrs.**

Visual Dynamics 1 is a problem solving course in which the student investigates the dynamic visual forces involved in composing on a two-dimensional plane. Students explore the interrelationships of composition, process, perception and intention. The course broadens the student's skill level in idea development, research strategies, and technique through the understanding and application of concepts, processes and the visual language. One-third of the semester is spent in a digital environment introducing the student to the computer lab and digital imaging. Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [F110].

### **FIAR 1110. Visual Dynamics 2: Color, Light and Time. 3 cr. hrs.**

Visual Dynamics 2 is a problem-solving course that builds on the visual exploration begun in FIAR 1100 with a concentration on issues of color and time. Color and light are explored as a visual phenomenon, as a perceptual occurrence, as pigment with specific mixing properties, and as an element with powerful expressive and symbolic potential. Time, the fourth dimension, is investigated through problems dealing with simultaneity and sequentiality. The range of tools includes traditional materials/mediums and digital imaging. One-third of the semester is spent working in a digital environment. Prereq: FIAR 1100; Cons of dept. Fee paid to MIAD. MIAD # [F111].

### **FIAR 1120. Research, Practice and Methods 1. 3 cr. hrs.**

In Research, Practice and Methods (RPM), students investigate strategies for effective communication. Each course emphasizes process and creative problem solving - appropriately using inquiry and conduct in-depth research to promote the development of their own studio practice within a historical, cultural, and personal context. The student chooses a selective from a variety of offerings. RPM selectives deal with concepts fundamental to many disciplines. These courses focus on a specific theme or issue to contextualize the student's learning and promote a deeper understanding of one's personal creative process. Students actively engage in various research practices to develop critical thinking and nurture their commitment to communicating ideas in a substantive way. Sample Course Offerings: Design and the Elastic Mind, Interpersonal Chronicles, Outrage and Tradition, Daily Media Feeds, Chance and Improvisation. MIAD # [F120].

### **FIAR 1300. Space, Form and Materials. 3 cr. hrs.**

Space, Form and Materials investigates three-dimensional visual experiences and the application of design principles to the creation of vital and expressive forms. Three-dimensional design techniques are studied through projects dealing with the development of ideas via handmade forms. Within the course, students receive an orientation to MIAD's 3-D lab which includes instruction in the proper and safe use of simple hand tools and power equipment. Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [F130].

### **FIAR 1500. Visual Statement:. 1.5 cr. hr.**

In Visual Statement courses students examine the means of visual communication and artistic expression. Each course emphasizes concept, process and creativity - exploiting subject matter and media as a means of obtaining conceptual goals. Students are made aware of the interconnections which link the visual arts. Prereq: FIAR 1300; cons. of dept. Fee paid to MIAD. MIAD # [F150-159].

**FIAR 2000. Drawing 1. 3 cr. hrs.**

Drawing 1 challenges the student with various complicated compositional problems. Technical proficiency and diversity are enriched through the use of familiar drawing media as well as aggressive experimentation with new media and manners of working. Additionally, the drawing experience is broadened by confronting a wide variety of drawing subjects. Prereq: FIAR 1000 and FIAR 1100; cons. of dept. Fee paid to MIAD. MIAD # [FA200].

**FIAR 2010. Drawing 2. 3 cr. hrs.**

Drawing 2 presents open-ended involvements which require students to determine their own artistic reactions, concerns and pursuits. In addition, anatomy of the head and neck is studied as an integral component to the expressive and inventive aspects of the portrait and the self-portrait. Prereq: FIAR 2000; cons. of dept. Fee paid to MIAD. MIAD # [FA201].

**FIAR 2020. Animation 1. 3 cr. hrs.**

This class is an introduction to the basics of animation, principles that can be applied to a wide variety of styles and technologies. Students will explore the unique qualities of the medium through a series of projects that can be adapted to their own personal interests. The course will provide the student with a foundation of skills that will prepare them for further study in the field. MIAD # [TB200].

**FIAR 2030. Typography 1. 3 cr. hrs.**

Typography courses provide the students with an understanding of the integral use of typography in the overall design concept. Type as a communicative and creative element is explored. Students become familiar with the organizational skills necessary for clear communication as well as the formative aspects of typographic symbols and arrangement. Typography I is an introductory course that focuses on the history and practice of using typography in design. This course will familiarize students with several methods for structuring type so that they might gain an understanding of how typographic variables and the principles of legibility and readability affect visual communication. Each student will be encouraged to develop their own personal awareness of and appreciation for typography; so that they will become equipped with the terminology, theory and practice necessary for making design decisions that facilitate understanding among their intended audience. Prereq: Sophomore standing. MIAD # [DS202].

**FIAR 2040. Typography 2. 3 cr. hrs.**

This course provides students with the continued use of typography within more specific design assignments. Type as a volume of text and the collaboration between text and image in print and digital media is explored. Coursework will enable the student to participate in an advanced study of typographic design. Concentration will be placed on exercises in and the analysis of the perceptual aspects of communication, the ways in which we derive meaning from and contribute meaning to our cultural environment through type. In other words, to explore and clarify the relationships between the spoken word and the published visual language of print and digital words. The continuum of Typography I and Typography II offers an advanced understanding of how typographic variables (placement, order of chronology, size, weight, leading, column width, alignment, style, orientation, and choice of typeface) and principles of legibility and readability affect visual communication. Logistical issues of planning and organizing paginated systems, information systems, and type in motion will also be presented. Each student will continue to develop the personal awareness necessary for making design decisions that facilitate understanding amongst their intended audience. Prereq: FIAR 2030. MIAD # [DS203].

**FIAR 2050. Video 1. 3 cr. hrs.**

This Time Based Media, video course, is an introductory course that deals with time, movement and sound as they relate to the media of video. Narrative, as a structuring component in a video, is also considered and explored. This course uses a variety of hardware and software for post-production editing. Students must have access to their own video camera.

**FIAR 2060. Pre Production Design. 3 cr. hrs.**

This course will involve the use of professional quality cameras and high end, non-linear video editing computers and programs. The goal of this course is to acquaint the student with professional equipment in order to refine their understanding of the video experience. This involvement will include projects that require a controlled environment and the use of multiple cameras as well as consideration for lighting techniques. Lectures on editing and scripting will provide the necessary understanding of what it means to work on a production standard video. The complicated issues surrounding the making of documentaries as well as independent video projects will be covered during the semester. Prereq: FIAR 2050. MIAD # [TB203].

**FIAR 2070. Introduction to Sound. 3 cr. hrs.**

Introduction to Sound covers issues fundamental to all time based media. The course will examine techniques and applications of sound as a component of time and motion based media. A variety of technical issues relating to recording and editing sound will be explored in depth. The theory and practical impact of sound is explored in conjunction with technical fundamentals. MIAD # [TB204].

**FIAR 2080. Drawing for Animation. 3 cr. hrs.**

Drawing for Animation is an investigation of kinetic forms through the act of observational drawing, digital manipulation and pencil testing. This visual exploration combines the perception and interpretation of kinetic objects, environments, and life forms. The course stresses the importance of observing, comprehending, and portraying the correct perception of motion and kinetics into an animated form. Prereq: FIAR 2050. MIAD # [TB207].

**FIAR 2100. Figure Drawing 1. 3 cr. hrs.**

Figure Drawing I stresses correct perception and understanding of the human form through the study of human skeletal anatomy. Anatomical concerns are complemented by experimentation with new media and compositional issues. MIAD # [FA210].

**FIAR 2110. Figure Drawing 2. 3 cr. hrs.**

In this course students begin to explore the expressive potential of the human form through complicated compositional manipulations and media applications. Prereq: FIAR 2100. MIAD # [FA211].

**FIAR 2120. History of Modernism: Art. 3 cr. hrs.**

Primarily an object-driven course, FIAR 2120 provides an in-depth study of modern and contemporary art makers and movements in the context of the critical, cultural and social issues surrounding them. Through intensive reading, writing, research, and oral assignments, students have the opportunity to study key figures, movements and theories. The course begins with a review of major trends in art since the end of the 19th century and follows with a close examination of art from the 1950s through the present day. Prereq: HIST 1201 and HIST 1202; cons of dept. Fee paid to MIAD. MIAD # [AH212].

**FIAR 2130. History of Modernism: Design. 3 cr. hrs.**

Primarily an object driven course, FIAR 2130 outlines major styles and trends in communication design, illustration, industrial design, architecture and interior architecture and design from the beginning of the industrial period to the present. Through intensive reading, writing, research and oral assignments, students have the opportunity to study the philosophical, social, cultural and commercial concerns of such primary movements as Arts and Crafts, Art Nouveau, Art Deco, and Post-Modernism within Europe, the United States, and Japan. Prereq: HIST 1201 and HIST 1202; cons. of dept. Fee paid to MIAD. MIAD # [AH213].

**FIAR 2220. Painting 1. 3 cr. hrs.**

Direct painting materials, techniques, and practices are introduced in acrylic and oil media. Working from direct observation, students are introduced to the formal visual principles emphasizing composition and color as elements of a stable pictorial space. Demonstrations, slide lectures and critiques support studio assignments and instruction in traditional and contemporary formats. Prereq: FIAR 1000 and FIAR 1100; cons. of dept. Fee paid to MIAD. MIAD # [FA220].

**FIAR 2230. Painting 2. 3 cr. hrs.**

Indirect painting and glaze medium and techniques are introduced and practiced within traditional and contemporary painting philosophies. Transparent color theories, perception and formal principles provide the basis for directly observed studio assignments. Slide lectures, demonstrations and critiques assist in developing an expanded visual vocabulary. Prereq: FIAR 1000, FIAR 1100 and cons. of dept. Fee paid to MIAD. MIAD # [FA221].

**FIAR 2240. Water Media 1. 3 cr. hrs.**

Transparent watercolor materials, techniques, theory and practice are introduced and explored working from direct observation. Formal principles are presented as elements of a stable pictorial space. Demonstrations, slide lectures and critiques support studio instruction. MIAD # [FA224].

**FIAR 2250. Water Media 2. 3 cr. hrs.**

Traditional and experimental techniques of opaque watercolor, egg tempera and other aqueous media are introduced and practiced. Traditional and contemporary water media philosophies are presented and discussed, with emphasis on color and compositional skills. Demonstrations, lectures and critiques augment studio assignments. Prereq: FIAR 2240. MIAD # [FA225].

**FIAR 2300. Principles of Screenprinting. 3 cr. hrs.**

Covers a wide range of screenprinting techniques using water-based inks. Various methods of creating an image on the screen will be covered, including photographic, block out digitally created stencils. While learning the proper screen preparation and competent use of the equipment, the course will focus on presenting important visual and conceptual problems relevant to the screenprinting process. Prereq: FIAR 1000 and FIAR 1100; cons. of dept. Fee paid to MIAD. MIAD # [FA230].

**FIAR 2310. Principles of Relief Print. 3 cr. hrs.**

Covers monochromatic and color relief-printing techniques using wood and linoleum. The students will learn the proper use of tools and equipment. The course will focus on presenting important visual and conceptual problems relevant to the relief process. Both traditional and contemporary approaches will be covered. Prereq: FIAR 1000 and FIAR 1100; cons. of dept. Fee paid to MIAD. MIAD # [FA 231].

**FIAR 2400. Computer Studio 1. 3 cr. hrs.**

This course introduces students to the general structure of the Macintosh computing platform and engages them in an intensive tool- and function-based experience with the current versions of QuarkXPress and Adobe Illustrator. Digital pre-press fundamentals are also introduced. Prereq: Jr. stdng; cons of dept. Fee paid to MIAD. MIAD # [DS230].

**FIAR 2410. Computer Studio 2. 3 cr. hrs.**

An introduction to the fundamental workings of the tools and functions inherent in the current version of Adobe Photoshop. Additional challenges include interfacing between QuarkXPress, Adobe Illustrator and Adobe Photoshop to create more complex documents, and advanced aspects of the digital pre-press. Prereq: Jr. stdng. and FIAR 2400; cons of dept. Fee paid to MIAD. MIAD # [DS231].

**FIAR 2420. Materials and Methods 1. 3 cr. hrs.**

Materials & Methods I focuses on the skills required to fulfill specific, increasing difficult conceptual objectives using a variety of materials and processes. Assimilation of information from lectures, demonstrations, handouts and studio experiences will be evident as students execute a series of increasingly sophisticated shapes, forms and structures in woods, metals, plastics and composition materials. Emphasis is placed on the safe and intelligent use of tools, particularly stationary power equipment. Materials and Methods I emphasizes the specific hand and power tool techniques necessary to develop controlled edges, surfaces and assemblies through a series of increasingly difficult design problems and using a variety of materials including plastics, woods, metals, adhesives, paints and fasteners. The processes of sketching many alternatives and refining one through mock-ups, moquettes, patterns and orthographic drawings accompany each assignment and form the bridge between concept and designed reality. This course is designed to work in tandem with Forms and Structures and communication between instructors regarding the specific nature of assignments as well as coordinating due dates is a necessity. MIAD # [DS240].

**FIAR 2500. Sculpture: Casting & Carving. 3 cr. hrs.**

Sculpture: Carving and Casting investigates specific sculpture techniques, methods, philosophical concerns, and ways of seeing/working that give personal expression to material form. The shaping of permanent materials such as wood and stone by reductive approaches conceptually contrasts and complements problems in introductory casting of metals and other materials. Demonstrations, lectures, field trips, readings and critiques will develop the student's awareness of historical precedents and contemporary sculpture issues. Consideration of the interrelationships among form, material, technique and content will hone student's ability to analyze their own and others work in critiques. Prereq: FIAR 1300; cons. of dept. Fee paid to MIAD. MIAD # [FA 250].

**FIAR 2510. Construction: Metal & Wood. 3 cr. hrs.**

This course is structured to provide students with a fundamental understanding of the process of casting metal and direct metal fabrication. The material transformation that takes place in the foundry during the process of casting metal contrasts and complements the manual techniques and methods of direct metal fabrication. Metal fabrication and foundry work share many of the same tools and techniques however each of these traditions of making ask sculptors to think in different ways. Appropriate use of the inherent qualities of process and materials is stressed. As choice of process and material are ideological decisions students will be encouraged to develop a knowledge and respect for the tools, techniques and material of choice. Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [FA 251].

**FIAR 2520. Figure Sculpture 1. 3 cr. hrs.**

To understand human form in three dimensions, students begin by mastering manual/perceptual skills of direct rendering in clay from live models. A foundation of figurative realism will be gained by learning anatomy, proportion, structure, pose and gesture with an awareness of historical precedents. Clay plasticity can facilitate a dynamic liveliness. Basic methods of hand building such as coil, slab construction, and modeling are explored, followed by firing and finishing. The course includes using armatures, mold-making and casting. Weekly investigations of materials, techniques and content will be engaged through demonstrations, slide lectures, discussions, and critiques. Prereq: FIAR 1000 and FIAR 1300; or FIAR 1100 and FIAR 1300; cons. of dept. Fee paid to MIAD. MIAD # [FA 252].

**FIAR 2530. Figure Sculpture 2. 3 cr. hrs.**

Figure Sculpture 2 progresses from the skills developed in the first sculpture course toward more content-based work with concern for context. Diverse ways of interpreting the figure's planes, volumes, mass, structure, and movement initiate ideas about the figure as clear representation, abstract form, or metaphor. Assignments include a large body of work in clay, armatures, direct plaster modeling, multiples, body casting, mixed media and kinetics. Attention to surface, texture and finish is measured against questions of credibility. Serious research evidenced in work, discussions and critiques is emphasized. Prereq: FIAR 2520; cons. of dept. Fee paid to MIAD. MIAD # [FA 253].

**FIAR 2560. Contemporary Practices Sculpture 1. 3 cr. hrs.**

Contemporary Practices is both an introduction to sculpture and the backbone of our program. Our major objective is to identify sculptural core concerns and sculpture's expansive reach into all aspects of contemporary art. Building inquiry, research and interpretation into the practice of making art is the focus of this class. The combined sophomore and junior levels will foster a climate of inquiry and discovery from varying perspectives, levels and depths; gather, share and understand differing roles of skills; provide opportunities to challenge presumptions and learn from one another through mentoring; explore and cultivate dimensions of the art community. MIAD # [FA256].

**FIAR 2600. Principles of Etching. 3 cr. hrs.**

An introductory course to the following etching techniques: hard ground, soft ground, aquatint and drypoint. Covers the preparation, etching and printing from copper and steel plates. A wide range of visual concepts will be addressed, that pertain to particular characteristics of different etching techniques. Issues of composition, space, tone, texture and value will be emphasized. Students will be encouraged to discover their personal voice while learning principles of etching. Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [FA260].

**FIAR 2610. Non-traditional Intaglio. 3 cr. hrs.**

Explores a technique of collagraph, a non-etch intaglio technique where image is constructed using various textured materials and the plate is printed either as intaglio or relief. This innovative method allows creating unique surfaces, use of cut plates, working in large format and combined intaglio and relief printing. Issues of composition, space, tone, texture and value will be addressed, with a focus on large format prints. Students will be encouraged to discover their personal voice while learning the principles of collagraph. Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [FA261].

**FIAR 2700. Principles of Stone Lithography. 3 cr. hrs.**

Examines the basic methods and techniques of fine art lithography. All aspects of preparing a stone for drawing, as well as the printing process and editioning will be covered. Students will work using various drawing and lithographic tools. There is a strong emphasis on drawing, exploring a wide range of visual issues including composition, handling of materials and the investigation of spatial tonal and textural relationships. Students will be encouraged to seek and develop a personal voice, while learning rudimentary concepts of drawing and printmaking. Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [FA270].

**FIAR 2710. Principles of Photo and Plate Lithography. 3 cr. hrs.**

This course is a continuation of Stone Lithography and Artist's Book. The students further their knowledge of stone, learning about color lithography, registration and editioning. The students will examine various traditional and contemporary approaches in digital imaging and computer application. Prereq: Cons of dept. Fee paid to MIAD. MIAD # [FA271].

**FIAR 2800. Principles of Photography. 3 cr. hrs.**

Introduction to photography. This course covers basic principles of all forms of photography, with an emphasis on black and white photography and using the 4x5 view camera. Projects encompass camera handling, film exposure and development, darkroom procedures, print finishing, and evaluation. Students investigate depth of field, motion, burning, dodging, spotting and print presentation. The history of photography from its invention to 1950 is covered in this introductory course. One hour of history lecture is required each week. Students must have a 35mm camera with adjustable aperture and shutter speed controls and a light meter. Prereq: FIAR 2810; cons. of dept. Fee paid to MIAD. MIAD # [FA 280].

**FIAR 2810. Elements of Digital Photography. 3 cr. hrs.**

Computer-based class for photographers. Beginning with the basics of image acquisition, manipulation and output, the course will progress to an in-depth exploration of image manipulation software and aesthetics specific to electronic photographs. The course provides essential skills for those anticipating a career in photography, and provides an opportunity to use the computer as a fine art tool. Individual creative pursuits are emphasized. Prereq: cons. of dept. Fee paid to MIAD. MIAD # [FA281].

**FIAR 2900. Communication Design 1. 3 cr. hrs.**

Fundamentals of communication design are introduced to the student with theoretical and applied studies in design, problem solving, communication, and verbal and visual presentation. Prereq: FIAR 1100; cons. of dept. Fee paid to MIAD. MIAD # [DS200].

**FIAR 2910. Communication Design 2. 3 cr. hrs.**

Fundamentals of communication design are introduced to the student with theoretical and applied studies in design, problem solving, communication, and verbal and visual presentation. Prereq: FIAR 2900; cons. of dept. Fee paid to MIAD. MIAD # [DS201].

**FIAR 2920. Lighting. 3 cr. hrs.**

This introductory course will provide an overview of essential principles, techniques, and tools for lighting a variety of situations. Demonstrations will take place both in the studio and on location. Through demonstration, hands-on practice and assignments, students will learn how to use lighting equipment and accessories and a range of light sources including tungsten, studio strobe, portable strobe, and daylight. Through slide presentations and discussions of printed matter, students will review examples of the direction and quality of light and discuss its function in the photograph. At the end of this course, students will have a repertoire of lighting techniques to heighten the expressive capacity of their work. Prereq: FIAR 2800. MIAD # [FA290].

**FIAR 2930. Printing Processes. 3 cr. hrs.**

In this course students gain an appreciation for photography's expressive possibilities so that they may use photography experimentally and creatively. Conventional black and white printing skills will be reinforced and piezographic (digital black and white) printing will be introduced and developed to the highest standard. Prereq: FIAR 2800 and FIAR 2810. MIAD # [FA291].

**FIAR 2931. Topics in Fine Art 1. 1-3 cr. hr.**

Prereq: Cons. of dept.

**FIAR 3000. Drawing 3. 3 cr. hrs.**

Students search, invent, embrace and develop individual concerns within traditional concepts. They work within broad parameters which promote and motivate drawing as a means to explore ideas rather than necessarily to arrive at a conclusive visual statement or goal. Prereq: FIAR 2010. MIAD # [FA300].

**FIAR 3020. Information Graphics. 3 cr. hrs.**

Information Design is communication design. It focuses on conveying clear messages to an intended audience. This objective can be applied to many forms of communication from charts and graphs to instructions, from maps and way-finding to interface problems. Information Design solutions should integrate previously acquired skills in design, typography, and image making. To be effective, they must use carefully considered elements, rather than complex gratuitous ones. This course will help students develop a strong design process. Students will effectively and efficiently research and assimilate information in order to understand and ultimately interpret what they have gathered. They will explore several ideas during the sketching phase that follows. They will edit content, create appropriate imagery and combine the two in harmonious compositions that are simple, effective and engaging. Students are expected to think critically about the content, their work, and the work of their classmates. They will participate in a dialogue about design in order to improve their work and their ability to talk professionally about the big ideas addressed through the class assignments. Prereq: FIAR 2030 and FIAR 2910. MIAD # [DS302].

**FIAR 3030. 3D Computer Animation. 3 cr. hrs.**

In this class, you will learn the basics of 3D modeling, rendering, and animation, as well as many difficult uses for 3D. The purpose of this learning is to create artwork, not just to mimic mainstream 3D animation seen on television and in films. Stylistic and technical experimentation will be emphasized. Prereq: TB201 MIAD # [TB302].

**FIAR 3040. Packaging Design. 3 cr. hrs.**

Students are introduced to the process of designing three-dimensional containers, individually or as systems for the mutual benefit of the end user and the manufacturer. Emphasis is placed on the graphics application of symbols, shape, color, illustration and typography and how they relate to three-dimensional packaging structures as well as the point of sale application of the packaging. Credits: 3 Prerequisites: FIAR 2030 and FIAR 2910. MIAD # [DS303].

**FIAR 3050. Advertising Design. 3 cr. hrs.**

This course is designed to familiarize the student with art direction within an advertising agency. Students learn the fundamentals of advertising, from a history of advertising, to lectures and seminars on marketing, research, account service, copywriting, illustration, photography and self promotion. The focus will be the role of an art director or designer within an agency environment. Prereq: FIAR 2030 and FIAR 2910. MIAD # [DS305].

**FIAR 3070. Water Media 3. 3 cr. hrs.**

Emphasis is placed on the continued investigation of media and techniques as elements of an aesthetic vocabulary. Course assignments provide conceptual challenges and emphasize individual interpretation and exploration. Traditional and contemporary painting issues broaden the context of this exploration. Prereq: FIAR 2250. MIAD # [FA307].

**FIAR 3100. Figure Drawing 3. 3 cr. hrs.**

Figure Drawing 3 provides a thorough investigation of soft tissue human anatomy. The goal is to gain insight and awareness about the complexities of the human machine in order to facilitate sensitive and knowledgeable drawing. Prereq: FIAR 2110. MIAD # [FA310].

**FIAR 3200. Painting 3. 3 cr. hrs.**

Painting 3 continues the investigation of subject, technique and structure fundamental to expression and communication. Course assignments provide for individual interpretation and experimentation. Intentionality is introduced and codified. Readings further perceptual standards and modes of criticism. Students examine painting philosophies through individual and group critiques, slide lectures and invited guests. Prereq: FA220 and FA221, or DS213, or cons. of instr.

**FIAR 3220. Figure Painting. 3 cr. hrs.**

The human figure is introduced in both theory and practice. Working from direct observation, media, media application and technique options are explored and developed. Critiques, lectures and demonstrations augment studio instruction. Prereq: FIAR 2200 and FIAR 2210, or cons. of instr. MIAD # [FA322].

**FIAR 3510. Integrated Studio Sculpture. 3 cr. hrs.**

In the first semester the student will explore assemblage, installation, light, kinetics, and multi-media as embraced in contemporary sculptural language. Specific problems are preceded by readings, demonstrations of newer materials/processes, perceptual workshops, and experimental exercises. Acquisition of technical skills will be driven by the student's personal vision and guidance from the instructor. Conceptual understanding will emerge from the production of the student's own work, in conjunction with the application of a range of critical models. Prereq: FIAR 2500 or FIAR 2510 or cons. of instr.



**FIAR 3520. Topics in the Expanded Field: Anatomy and Structure. 3 cr. hrs.**

Students will begin to develop personal figure-based work while weighing and debating questions of the human body. Ongoing discourses in cultural meaning, medical advances and scientific inquiry may open to expression other aspects of human experience (health and disease, psychology, gender and identity). Knowing how characteristics of the human form relate to tools, vessels and architecture is particularly relevant to sculpture practice. Technical/material fluency will be achieved by focusing on one area of choice, such as a series or a life size full figure with attendant studies. Advanced student proposals and exhibitions provide a basis for debate and reference for critiques. Prereq: FIAR 2520 and FIAR 2530. MIAD # [FA352].

**FIAR 3530. Topics in the Expanded Field: Body. 3 cr. hrs.**

Serious students of the figure pursue rigorous anatomical knowledge and heightened skills of observation. The first eight weeks are devoted to a 1/2 scale full figure over welded armature. Working from a live model and research, the student will accurately progress from a weight-bearing analysis of the skeleton, to build up layers of muscle and tissue. Life size studies of hands and feet promote detailed understanding. Portraiture, introduced by a series of facial expression exercises, continues the sustained involvement. Self-portraiture will be used as a vehicle for exploring ones own nature as an artist. Field trips, presentations and research amplify studio inquiry. Critiques measure progress. Prereq: FIAR 2520 and FIAR2530 or cons. of instr. MIAD # [FA353].

**FIAR 3540. The Material Aesthetic: Foundry. 3 cr. hrs.**

The continuation of Mixed Media broadens to include students developing work in the medium of their choice with guided conceptual challenges. The making of sculpture is the discipline we begin from in order to learn and to know. By emphasizing studio practices/processes, personal motivation, and self-directed work, individual voice will develop. Technical problems are addressed on one-on-one consultations with the instructor; these issues then form the basis for group critiques that benefit the rest of the class. Readings, research, discussion, field trips, and visiting artists enhance understanding of critical issues, larger cultural and aesthetic contexts and encourage thoughtfully conceived and appropriately crafted sculpture. Prereq: FA350 or cons. of instr. MIAD # [FA354].

**FIAR 3550. Topics in the Expanded Field: Public Art. 3 cr. hrs.**

Working in the public realm or fulfilling commission work offers added horizons for artists. This semester will focus on outdoor, site-specific, large scale and environmental work. Students will create pieces in both permanent and transitory mediums supported by drawings, proposals and documentation. Concurrent with each assignment will be experiences that involve practical and technical communication, and, sometimes, community or political challenges that extend beyond the studio. Field trips and visiting artists, architects and city planners augment class presentations. Prereq: FA251 or cons. of instr.

**FIAR 3560. Contemporary Practices Sculpture 2. 3 cr. hrs.**

Advanced students will participate in the design on the course by identifying and investigating critical, complicated relationships among contemporary sculptural forms, choices of materials, modes of production, language and distribution. An added emphasis on professional practices in sculpture will further expand understanding of current art worlds. Questions such as how to make a living, how to navigate and contextualize ones practice, how to be part of a dialogue and engage in different conversations will be explored through a combination of critiques, site visits, exhibitions and conversations with visiting artists, critics, and other arts professionals.

**FIAR 3580. Topics in the Expanded Field: Mapping. 3 cr. hrs.**

In this special topic course, students will explore a shared single contemporary theme or issue through diverse, personal sculptural practices. The advantages of shared investigation upon individual conceptual growth will challenge the choices one makes in materializing ideas into new forms. Since the medium is open, the instructor will give technical assistance on a case basis. Critical questions about intent, context, discovery and meaning will be emphasized.

**FIAR 3680. Advanced Printmaking Interdisciplinary Approach 1. 3 cr. hrs.**

This course emphasizes the development of visual and conceptual ideas through the materials, tools, and chemistry of various printmaking processes. Techniques such as various intaglio processes, relief printing, screenprinting, lithography, and bookmaking, etc., are the basis for this course. Students are encouraged to expand their visual language and to advance in technical abilities and conceptual development as they begin to make choices in areas of concentration. The interdisciplinary approach in this course will allow students to combine various techniques in order to develop themselves as professional artists. Prereq: FIAR 2610. MIAD # [FA368].

**FIAR 3690. Advanced Printmaking Interdisciplinary Approach 2. 3 cr. hrs.**

In this course students have the opportunity to evolve a body of work thematically. Interdisciplinary approaches are encouraged. Students work in both traditional and contemporary processes appropriate to furthering the generation of image choices. Professional practices are addressed through visiting artists and master printers, professional portfolio development, and visits to print houses and museums. Prereq: FIAR 3680 MIAD # [FA390].

**FIAR 3900. Photographic Problems. 3 cr. hrs.**

This course investigates aesthetic and technical photographic issues. Themes of complex image-making, still-life and portraits are considered, along with requisite technical issues. Students also explore historical and contemporary aesthetic issues. They will produce photographs that demonstrate artistic intent. Prereq: FIAR 2930. MIAD # [FA390].

**FIAR 3910. Photographic Voice. 3 cr. hrs.**

The photographic voice is a course that examines the core issues involved in developing personal photographic vision. This course looks at how and why we are different from one another and how that translates into the medium of photography. Specifically this course will explore the impact of subject, format, process and presentation in developing personal vision. The value of traditional and non-traditional forms of presentation and contemporary approaches to image making through other mediums will be examined as part of the development of the individual photographic voice. Prerequisites: FIAR 2800, FIAR 3900. MIAD # [FA391].

**FIAR 3931. Topics in Fine Art 2. 1-3 cr. hr.**

Prereq: Cons. of dept.

**Film****FILM 1931. Topics in Film Studies. 3 cr. hrs.**

Intensive examination of a topical issue in film. Specialized focus changes but may include issues such as women in film, minorities in film, regional or national films, auteur studies, genre studies, etc. Topics announced in Schedule of Classes.

**FILM 2240. Film as Communication. 3 cr. hrs.**

Nature and characteristics of the film medium as a means of conveying information, ideas and attitudes. The interpretation of film messages. Offered alternate spring terms.

**FILM 2260. Film as Art. 3 cr. hrs.**

Study and evaluation of film as an art-form. The various theories of cinematic excellence and aesthetics. A critical approach to film in all its contemporary forms and genres. Offered alternate spring terms.

**FILM 2280. Film and Popular Culture. 3 cr. hrs.**

Study of popular culture and its varied categories (myths, stereotypes, icons, heroes, etc.) applied to contemporary American movies and to some other popular entertainment, including television, radio, music and print. Impact of popular media on society, culture and values.

**FILM 2290. Economic and Social Aspects of Film. 3 cr. hrs.**

Examines the economic structure of the film industry, the effect that this structure has on the making and content of motion pictures, and the affect of motion picture content on viewers, particularly children and young adults.

**FILM 2310. Film Production. 3 cr. hrs.**

Basic techniques in how to make a film. Emphasis on preproduction (script analysis, story-boarding, casting, rehearsing), directing, editing and postproduction of short narrative films. Utilizes the creative use of camcorders, microphones, and the Avid editing system. Lecture/lab format. Prereq: BREC 2205 and BREC 2335.

**FILM 2620. History of Film. 3 cr. hrs.**

Traces the development of film as a distinctive mode of communication and an important art form within societal and theoretical contexts. Particular emphasis on films and the film industries of the United States and Europe.

**FILM 4953. Seminar in Film. 1-3 cr. hr.**

Specific subjects of seminars to be announced in the Schedule of Classes. Variable topics.

**FILM 4995. Independent Study in Film. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

**FILM 4999. Senior Thesis. 1-3 cr. hr.**

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Prereq: Cons. of dept. ch.

**Journalism****JOUR 1100. Digital Journalism 1: Journalism Bootcamp. 3 cr. hrs.**

Covers basic journalism skills and concepts, including news values, story selection and fact verification by covering neighborhoods and events. Students will find and interview sources and write for radio, TV, web and print, with emphasis on learning and audio skills. Projects appear on a course website.

**JOUR 1200. Basic Photography. 3 cr. hrs.**

Introduction to basic photography using traditional and digital methods, including the 35mm camera, lenses, films, natural and artificial lighting, and control of motion. Lab work is devoted to digital output using negative scanners, Photoshop, and color printers. Emphasis on visual communication. Lecture/lab format. Camera rental optional.

**JOUR 1550. Digital Journalism 2: Reporting and News Design. 3 cr. hrs.**

Students move beyond event coverage and learn to research and produce stories about important neighborhood issues. Students learn to cover civic issues related to police, fire, courts and taxation, and dig for statistics and facts in databases. Includes writing for radio, TV, web and print, with an emphasis on learning still photography skills. Projects appear on a course website. Prereq: JOUR 1100.

**JOUR 1964. Practicum in Student Publications. 1 cr. hr.**

Under faculty direction, students work in Student Publications. Assignments in writing, editing, and production. Guest speakers from mass communication fields. S/U grade assessment.

**JOUR 2100. Digital Journalism 3: Community Reporting. 3 cr. hrs.**

Students learn to mine databases, public records, archives, interviews, public meetings and press conferences for critical information. Students use their investigative skills to uncover and report issues of public interest. Students continue to develop news writing, editorial judgement and story production skills and values, with a special emphasis on video journalism. Projects appear on a class website. Prereq: JOUR 1550.

**JOUR 3986. Internship in Journalism. 0-3 cr. hrs.**

Work experience in an area related to major supervised by an approved professional coupled with related academic work assigned. Approval of adviser and Internship Program Director required in advance of internship. May not substitute for a Journalism writing requirement. May be taken more than once to a maximum of three credits. Prereq: Jr. stndg.; JOUR major; and cons. of dept. ch.0 credit will be SNC/UNC grade assessment; 1-3 credits will be S/U grade assessment.

**JOUR 4110. Persuasive Writing. 3 cr. hrs.**

An advanced writing course giving the student directed practice in the work of moving readers to assents and to acts according to the principles of Aristotle's rhetoric as they apply to the instruments and techniques of journalism. Prereq: Jr. stndg. and JOUR 2100 or equiv.

**JOUR 4120. Feature Writing. 3 cr. hrs.**

Writing a range of features for newspapers and magazines, from short stories to profiles, using narrative nonfiction and literary journalism techniques. Prereq: Jr. stndg. and JOUR 2100 or equiv.

**JOUR 4130. Critical Writing. 3 cr. hrs.**

An advanced writing course giving the students understanding and directed practice in the arts criticism function in the mass media. Reviewing books, plays, films, television, music, restaurants primarily for print media. Development of critical theories for evaluation of the arts. Prereq: Jr. stndg. and JOUR 2100 or equiv.

**JOUR 4140. Depth Reporting. 3 cr. hrs.**

In-depth research, analysis and reporting on a problem, issue or situation in the political, public, administrative, financial, educational, social or welfare aspects of a community. Use of public records, interviews, and observations. Building a news series, creating a package of news and editorial material. Prereq: Jr. stndg. and JOUR 2100; or cons. of instr.

**JOUR 4150. Investigative Reporting. 3 cr. hrs.**

Identification and development of a story or series or events exploring a problem in a public institution. Use of computer data bases, printed records and interviews to analyze a current situation. Developing a series which presents the problem and the perspectives of individuals involved and affected. Prereq: JOUR 2100 or cons. of instr.

**JOUR 4160. Narrative Nonfiction Reporting. 3 cr. hrs.**

Emphasizes longform journalism, stresses strong reporting, immersion in a single subject over the course of a semester, in-depth interviews and detailed observation. Students work individually, turning in portions of their work weekly. Produce a publishable 10,000 to 15,000 word article as the final project. Prereq: JOUR 2100 or equiv., cons. of instr.

**JOUR 4200. Publications Editing. 3 cr. hrs.**

Editing principles and practices for print and online news publications. Editing copy, photos, charts and graphs; verification of information; writing headlines and captions. News judgment, wire services, backpack journalism, digital newsroom; digital production software. Prereq: JOUR 2100; or ADPR 1800; or ENGL 3210; or cons. of dept. ch.

**JOUR 4310. Communication of Urban Issues. 3 cr. hrs.**

Study and practice of communicating urban issues with public with an emphasis on reporting in various forms of media. Scope and types of media in the modern metropolis. Media interaction with political and social forces in the urban environment. Audience use of news media and other sources of information about urban issues.

**JOUR 4320. Religious Journalism. 3 cr. hrs.**

Study of, and practice in, mass media coverage of contemporary religion with an emphasis on the Catholic Church. Purposes and practices of religious publications; religion coverage in the secular media.

**JOUR 4330. Health, Science and Environmental Communication. 3 cr. hrs.**

Study of and practice in communication of health, science, environmental, and risk information with the public and other non-experts, especially through mass, specialized and new media. Includes overview of some current issues. Available for graduate credit.

**JOUR 4340. Business and Economic Journalism. 3 cr. hrs.**

Study of, and practice in, mass media coverage of business and economic issues. Survey of business publications and business reporting; economic publications and economic reporting. Corporate reports, forecasting, market information, and other publicized data. Management, labor, and other corporate problem areas.

**JOUR 4350. Sports Journalism. 3 cr. hrs.**

Study and practice in journalism dedicated to sports and general reporting on sporting events, figures and the industry. Survey of sports publications and online news services; news and feature reporting on sports in general publications. Media interactions with sports owners and figures. Reporting strategies for major sports. Special attention to multimedia formats. Prereq: JOUR 2100.

**JOUR 4360. Freelance Writing. 3 cr. hrs.**

Covers how newsstand, trade and online magazines work, how magazines use freelancers and writers, how magazine writing differs from newspaper reporting and other media, what excellence in magazine writing looks like and how students can focus, improve and polish their writing to sell to or work on a magazine.

**JOUR 4400. Media Entrepreneurship. 3 cr. hrs.**

The business side of being a journalist: management, financial, practical and professional issues running an online or print publication, operating as a backpack journalist, working as a freelancer. Management structures, business practices, contracts and marketing. Prereq: Jr. Stndg.

**JOUR 4500. Newspaper Design and Production. 3 cr. hrs.**

Fundamentals of design and production for print and online newspapers. Students develop skills in working with separate and integrated print and online delivery systems. Introduction to digital forms of news content for online news publications: audio, video, slide shows and podcasts. Digital production software. Prereq: JOUR 4200 or cons. of instr.

**JOUR 4510. Magazine Design and Production. 3 cr. hrs.**

Fundamentals of magazine design and production. Students develop understanding of basic elements of publication design and critical skills through analysis of various design problems. Prereq: JOUR 4200; computer workshop or demonstrated proficiency on the Macintosh computer with current design software.

**JOUR 4520. Online Editing and Design. 3 cr. hrs.**

Fundamental principles of processing and managing information in verbal and visual forms for Web publication. An emphasis on special editing and design issues created by the online environment and internet technology. Legal and ethical issues on the Internet. Prereq: JOUR 4200; computer workshop or demonstrated proficiency on the Macintosh computer with current design software.

**JOUR 4600. History of American News Media. 3 cr. hrs.**

The origin and development of Journalism in the United States considered in relation to American political, social and economic history. Consideration of newspapers, magazines, the electronic media, and important figures within each field. Prereq: Jr. stndg.

**JOUR 4700. News Media and Foreign Policy. 3 cr. hrs.**

Examines how media affect the design and implementation of foreign policy. Analyzes history of this process and issues of professional responsibility in relation to news coverage and humanitarian emergencies.

**JOUR 4800. Methods for Advising School Publications, Teaching Secondary Journalism. 3 cr. hrs.**

Covers strategies and methods for advising yearbooks, newspapers, online news and features in the context of scholastic journalism and for teaching journalism. Includes developing student staff; planning, production and assessment of scholastic publications and online products; evaluation of journalism texts for secondary level; working with faculty, school administrators, school boards, parents; budgeting; advertising sales; using desktop publishing and current software. Prereq: Jr. stndg.; JOUR 4200; cons. of instr.

**JOUR 4931. Topics in Journalism. 3 cr. hrs.**

Study of, and practice in, various areas of specialized work such as regional, small community, union, organization journalism, and the special interest press. Prereq: Jr. stndg.

**JOUR 4953. Seminar in Journalism. 1-3 cr. hr.**

Specific subjects of seminars to be announced in the Schedule of Classes. Variable topics. Prereq: Jr. stndg.

**JOUR 4995. Independent Study in Journalism. 1-3 cr. hr.**

Prereq: Jr. stndg. and cons. of dept. ch.

**JOUR 4996. Capstone: Journalism News Service. 3 cr. hrs.**

Students are the staff of an online news service, providing coverage of the area's underserved. Students provide news stories using a range of new media and links to the online Diederich Magazine. Prereq: JOUR 2100; Sr. stndg.

**JOUR 4997. Capstone: Magazine with a Mission. 3 cr. hrs.**

Students are the staff of a city magazine that addresses Marquette's social justice mission. Students produce print and online magazines with a social media presence. Students write, research, shoot, edit, design and produce stories about people and events that affect lines and spark change. Prereq: JOUR 2100; Sr. stndg.

**JOUR 4999. Senior Thesis. 1-3 cr. hr.**

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Prereq: Jr. stndg. and cons. of dept. ch.

## Music

**MUSI 1020. Appreciation of Music. 3 cr. hrs.**

An introductory course designed for the non-music major who wishes to develop musical perception through the development of more acute listening techniques, and structured to emphasize elements of musical style and their development in an historical context.

**MUSI 1100. University Chorus. 0-1 cr. hrs.**

The University Chorus meets twice weekly and presents at least two major performances per term. The choir is comprised of three major components offering a singing opportunity to ALL interested singers. Literature encompassing a large variety of styles and genres is performed. Placement interviews are held the first three days of each new term. New singers to the program are asked to be registered in either the 0 credit or 1 credit section prior to their placement interview. Returning singers are not required to do an additional placement interview and are asked to be registered in either the 0 or 1 credit section prior to the first rehearsal. Rehearsals begin the first Thursday of each term. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded on A-F scale.

**MUSI 1120. Liturgical Choir. 0-1 cr. hrs.**

Choir members concentrate on Liturgical music in rehearsals and concert performances. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded on A-F scale. Prereq: Cons. of Instr.

**MUSI 1140. Chamber Choir. 0 cr. hrs.**

Chamber Choir is an auditioned choir of women who meet twice weekly. The choir performs regularly with other ensembles on campus and does at least two performances per term. The choir performs a large variety of styles and genres. Auditions are held during the first three days of the fall and spring term. SNC/UNC grade assessment.

**MUSI 1160. Gospel Choir. 0-1 cr. hrs.**

Open to all students who qualify through audition held during fall registration week. Audition. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded on A-F scale.

**MUSI 1200. Symphonic Band. 0-1 cr. hrs.**

Open to all students interested in continuing their musical pursuits. All symphonic band instrumentation and skill levels are welcome. Pep band members will be recruited from the symphonic band. Performances will include all home basketball games (for pep band) and at least one formal concert each term (for symphonic band). Literature for symphonic band will be selected from all periods of music history while pep band literature will include appropriate high energy arrangements representing all areas of pop, rock and jazz. There are also possibilities of organizing ensembles for more playing experience, depending on interest and time. Some university owned instruments are available. Annual fall audition is held for chair placement only. No one is denied admission. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded.

**MUSI 1210. Wind Ensemble. 0-1 cr. hrs.**

The Wind Ensemble is Marquette's advanced wind and percussion group. The wind ensemble performs high-level wind and band music from all historical eras at high level of musicianship and artistry. The wind ensemble performs two concerts per semester. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded on an A-F scale. Prereq: An audition for placement within the wind ensemble is required.

**MUSI 1220. Jazz Ensemble. 0-1 cr. hrs.**

Open to all interested students. Literature to include hits from the big band swing era through current jazz standards. Performances include at least one formal concert per term. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded on A-F scale.

**MUSI 1300. Symphony Orchestra. 0-1 cr. hrs.**

Open to all students, faculty, and alumni interested in continuing their music pursuits. All orchestra instrumentation and skill levels are welcome. Literature will be selected from all periods of music history. Performance will include at least one formal concert per term. Some university owned instruments are available. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded.

**MUSI 1610. Carillon Discovery: An Introduction. 3 cr. hrs.**

In this introduction to the world of carillon, students explore the history, musical characteristics, bell foundries and carillons worldwide through readings, recordings, the internet and visits to the university carillon. This discovery is designed for a greater appreciation of the carillon for both musicians and non-musicians.

**MUSI 2410. Music History. 3 cr. hrs.**

Survey of the growth and development of Western Art Music from antiquity to the present time. Includes discussion of Medieval and Renaissance music, the Baroque Classical and Romantic periods, twentieth century and twenty-first century music. Prereq: MUSI 2500 and MUSI 3500.

**MUSI 2420. History of the Musical in America. 3 cr. hrs.**

Origins and development of the musical theatre in America from its early beginnings before *The Black Crook* (1866) to the production of the current Broadway season. Credit may be applied towards a Film minor.

**MUSI 2440. History of Jazz. 3 cr. hrs.**

Traces the colorful history of America's unique contribution to music, jazz, from its roots in African and European music of the nineteenth century to the fully-developed and many-faceted art form it is today. Many recorded musical examples and first-hand interviews highlight the lectures.



**MUSI 2460. Wind Band History and Analysis. 3 cr. hrs.**

History of the wind band in America from the American Revolution to modern times. Deals with early influences on the band as well as with those individuals who popularize this medium of performance. Included will be structural analysis of pieces written specifically for the wind band. Prereq: MUSI 1200; or cons. of instr.

**MUSI 2500. Music Theory 1. 3 cr. hrs.**

An introductory course designed for the non-music major who wishes to learn the fundamentals of musical notation, scale construction, intervals, chords, the writing of elementary harmonic progression, and basic techniques of traditional harmony.

**MUSI 2610. Music Technology. 3 cr. hrs.**

Technological applications in the music industry. Finale, Sibelius, Performer, Pro Tools, and Pyware computer applications. Includes audio mixing, recording and sampling, video applications and editing. Prereq: MUSI 2500.

**MUSI 2910. The Business of Music. 3 cr. hrs.**

Comprehensive overview of the practical aspects of the music industry. Marketing, production and distribution, resume preparation, economics of the music business and issues of taxation.

**MUSI 3500. Music Theory 2. 3 cr. hrs.**

Study of more advanced concepts of music theory, including modulation, chromaticism, altered chords, modal mixture, atonality, 12-tone composition, and other modernistic compositional techniques. Prereq: MUSI 2500.

**MUSI 3610. Conducting. 3 cr. hrs.**

Class instruction in the basic skills of the art of conducting. Covers the manual technique of conducting, including patterns, style, fermatas, accents and expressive techniques. Includes concepts of score study interpretation, and leadership. Prereq: MUSI 2410.

**MUSI 4953. Seminar in Music. 1-3 cr. hr.**

Specific subjects of seminars to be announced in the Schedule of Classes. Variable topics.

**MUSI 4995. Independent Study in Music. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

**MUSI 4999. Senior Thesis. 1-3 cr. hr.**

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Prereq: Cons. of dept. ch.

## Performing Arts

**PEAR 2964. Performing Arts Practicum. 0.5 cr. hrs.**

Students will learn through practical application the basic elements of theatrical production. The purpose is to educate and train artists of the theatre and to provide for its students a foundation of professionalism and dedication to their art within a climate of diversity, discovery and risk. Practical application of stage craft, stage properties, costumes, stage lighting, etc. by participation in acting and technical crews. Crew assignments will be a discretion of the faculty.



## Public Relations

### **PURE 4997. Public Relations Campaigns. 3 cr. hrs.**

Senior capstone course in public relations issues management for corporations, government and non-profit groups. Working in teams, students design a public communication campaign involving media management, community relations, educational outreach or other methods of advocacy in the public forum for achieving social justice goals using public relations strategies and tactics. Students design public communication campaign proposals for local or national clients. Student campaign designs are read and responded to by industry professionals, the client and the instructor. Students conduct field research, analyze results and incorporate findings in their action plans. Prereq: ADPR 2400 and ADPR 3600; or cons. of instr.; and restricted to declared ADPR majors and minors.

## Theatre Arts

### **THAR 1020. Theatre Appreciation. 3 cr. hrs.**

Introduces the student to the experience of theatre and seeks to give an understanding of theatrical history and practices, and a deepening appreciation of theatre as an art.

### **THAR 1100. Acting 1: Fundamental Technique. 3 cr. hrs.**

Basic stage technique for the beginning actor, including blocking, use of the setting, and analysis and illustration of units. Introduction to the terminology of the modern actor and the concepts of Constantin Stanislavsky. Lab required. Prereq: THAR major or THAR minor; or cons. of instr.

### **THAR 1120. Acting 2: Characterization. 3 cr. hrs.**

A continuation of the work begun in THAR 1100; refinement of the script analysis and research for the actor as well as exploration of the physical self in creating and developing a character for the stage through scene and monologues. Prereq: THAR 1100.

### **THAR 1150. Acting for Non-Theatre Majors. 3 cr. hrs.**

Developing individual skills through the use of theatre games, improvisation, and scene study. Development of critical knowledge of and appreciation for the theatrical performer.

### **THAR 1300. Stagecraft. 3 cr. hrs.**

The basic techniques of stagecrafts including construction of scenery and props, painting and rigging, lighting and running of shows. Prereq: THAR 1310 must be taken concurrently.

### **THAR 1310. Stagecraft Practicum. 0.5 cr. hrs.**

Stagecraft practicum provides hands-on training of basic techniques of stagecraft in construction of scenery and props, painting and rigging, lighting and running of shows. S/U grade assessment. Prereq: Must be concurrently enrolled in THAR 1300.

### **THAR 1320. Basic Costume Technology. 3 cr. hrs.**

Primary costuming techniques. Emphasis on obtaining a working knowledge of skills necessary to construct theatrical costumes. Includes hand and machine sewing as well as some costume crafts. Students apply skills to mainstage productions. Prereq: THAR 1330 must be taken concurrently.

### **THAR 1330. Basic Costume Technology Practicum. 0.5 cr. hrs.**

Basic Costume Technology Practicum provides hands-on training for primary costuming techniques including hand and machine sewing. S/U grade assessment. Prereq: Must be concurrently enrolled in THAR 1320.

### **THAR 1340. Make-Up. 3 cr. hrs.**

The fundamental techniques of stage makeup through using a variety of materials and exercises.

**THAR 2100. Acting 3: Advanced Scene Study. 3 cr. hrs.**

The application of acting fundamentals to text work through study and performance of scenes from realistic drama. Emphasis is on creating a personal process through which the actor can come to understand the character and, through creative use of self, bring that character to a full life of the stage. Areas of study include research and text analysis, developing a vocabulary of method related terminology, and familiarity with a variety of rehearsal techniques as tools to clarifying the objectives, obstacles, and actions of the character within the context of a play. Prereq: THAR 1120.

**THAR 2140. Voice and Movement for Stage. 3 cr. hrs.**

Study of the foundational aspects of voice production through movement; linking of the actor's vocal, physical and emotional resources through text and sound. Movement exercises to free, develop and strengthen the voice; study and practice of relaxation, projection and resonance, breath control, variety and vibration. Prereq: THAR 1100.

**THAR 2160. Voice and Speech 1. 3 cr. hrs.**

Continued work on vocal relaxation and production with an added concentration on removing regionalism and substandard sounds and acquiring clear, unaffected vibrant speech for the stage. Prereq: THAR 2140.

**THAR 2180. Acting for Camera. 3 cr. hrs.**

Basic Film/TV technique for the beginning camera actor, including: blocking, use of set/location, and analysis and illustration of scripts. Introduction to terminology and basic technical skills in camera/microphone usage and performance recording. Prereq: THAR 2100 or cons. of instr.

**THAR 2320. Scenographic Techniques. 3 cr. hrs.**

A study of rendering and mechanical drawing as it relates to theatrical design. An exploration of color media and perspective. Prereq: THAR 1300; or cons. of instr.

**THAR 2400. Aspects of Theatrical Design. 3 cr. hrs.**

Collaborative communication techniques for theatre artists. The exploration of the designer/director/performer relationship through development of visual and three-dimensional communication skills. Prereq: Soph. stndg. and THAR 1300; or cons. of instr.

**THAR 2500. Play Direction. 3 cr. hrs.**

The principles of play direction as a creative and interpretative art on the stage. Prereq: THAR 1100 and cons. of instr.

**THAR 2600. Play Analysis 1. 3 cr. hrs.**

Analyzes tragedy and comedy. Emphasis on performance, drama theory, and historical context of plays.

**THAR 3100. Acting 4: Shakespeare. 3 cr. hrs.**

Concentrates on the skills needed to perform Shakespearean texts through monologue and scene work. Emphasis on understanding and connecting with the material and then developing the language skills necessary to convey that knowledge to an audience. Exploration of Shakespeare as a product of the Elizabethan world, as well as its universality in modern production. Prereq: THAR 2140 and THAR 2100; or cons. of instr.

**THAR 3953. Career and Preparation Studies Seminar. 1 cr. hr.**

Emphasis will be on dissemination of information that will prepare the student for pursuing a career in the entertainment industry. Topics include: Professional internships and jobs in the entertainment industry, career planning including graduate school, internships, entry level jobs in performance, design, technical theatre, literary management, stage management, theatre management, portfolios for design and technical theatre, resume and photos for performance, professional unions, equity contracts and organizations. S/U grade assessment. Prereq: THAR major, Jr. or Sr. stndg.

**THAR 4100. Acting 5: Professional Auditions and Career Preparation. 3 cr. hrs.**

Designed to prepare the student for professional auditions. Emphasis is placed on presentation, appropriate material selection, analysis and arrangement of material, and developing a repertoire of audition pieces. In addition to prepared monologues the student will develop skills for other audition situations including improvisation, interviews, cold readings, and callbacks. Prereq: THAR 2140 and THAR 3100 and cons. of instr.

**THAR 4200. History of Theatre. 3 cr. hrs.**

A chronological survey of theatre history from its origins to 1914. Particular emphasis paid to major periods of theatrical achievement, studying conjectural and documented styles in acting, design and production methods. Prereq: Soph. stndg.

**THAR 4210. Contemporary Theatre. 3 cr. hrs.**

A survey of 20th century theatre practice from modern European theories of the late 19th century through Postmodernism. Special attention given to innovative aspects, such as surrealism and expressionism, epic theatre, the absurd movement, multi-media presentations, environmental theatre and multi-media presentations. Prereq: Soph. stndg.

**THAR 4220. History of Clothing 1. 3 cr. hrs.**

The study of clothing from historical perspectives. Clothing examined within sociological, artistic, and economic context. Clothing regarded as essential to Western culture, studied for a better understanding of peoples in different cultures and epochs.

**THAR 4230. History of Clothing 2. 3 cr. hrs.**

The study of clothing from historical perspectives. Clothing examined within sociological, artistic, and economic context. Clothing regarded as essential to Western culture, studied for a better understanding of peoples in different cultures and epochs.

**THAR 4240. History of Period Styles. 3 cr. hrs.**

Period movements as they relate to period clothing, decorative arts, architecture, music, etc., as they relate to different styles of theatrical performance and apply to actors, directors and designers.

**THAR 4320. Crafts for the Theatre. 3 cr. hrs.**

A techniques course that encompasses traditional and new materials which may be used in special projects often encountered in the creation of props and costumes. Includes casting and molding, thermoplastics, mask making, foam carving, jewelry, armor, etc.

**THAR 4340. Advanced Costume Technique. 3 cr. hrs.**

Course covers advanced methods of costuming such as beginning pattern drafting, basic tailoring techniques, fabric modification through dyeing and painting, millinery, and costume crafts construction. Prereq: THAR 1320; or cons. of instr.

**THAR 4360. Theatre Management. 3 cr. hrs.**

Study and practice of Theatre Management and Publicity. Lab requirement in production and/or stage management.

**THAR 4380. Computer Applications for the Theatre. 3 cr. hrs.**

The study and use of various software packages to support the principles of scenic, lighting, and costume design. An introduction to the development of theatrical design presentation using digital technology. Explores the use of digital tools in drafting, modeling, and rendering skills as a means towards basic theatrical design.

**THAR 4400. Costume Design. 3 cr. hrs.**

Study of the aesthetic and practical application of costume design and how it relates to the theatrical production process. Includes research, script analysis and costume renderings for in class projects. Offered alternate spring terms. Prereq: THAR 2400; or cons. of instr.

**THAR 4420. Lighting Design. 3 cr. hrs.**

The study and practice of theatrical lighting script analysis, research and planning techniques. Culminates in a realized collaboration. Prereq: THAR 1300; or cons. of instr.

**THAR 4440. Scenery Design. 3 cr. hrs.**

Study of the principles and practices of designing scenery for the stage. Prereq: THAR 2400; or cons. of instr.

**THAR 4500. Advanced Play Direction. 3 cr. hrs.**

Study of interpretative styles of play direction, rehearsal techniques, audience analysis, and contemporary trends. Opportunity to test principles in assigned laboratory productions. Prereq: THAR 2500; or cons. of instr.

**THAR 4600. Playwriting. 3 cr. hrs.**

Study of the structure and execution of dramatic scripts for theatre. Assignments to write and analyze scenes and one act plays.

**THAR 4953. Seminar in Theatre Arts. 1-3 cr. hr.**

Specific subjects of seminars to be announced in the Schedule of Classes. Variable topics.

**THAR 4961. Independent Project in Theatre Arts. 0-3 cr. hrs.**

Prereq: Cons. of instr. 0 credit will be SNC/UNC grade assessment; 1-3 credits will be graded.

**THAR 4986. Internship in Theatre Arts. 0-3 cr. hrs.**

S/U grade assessment. Prereq: Cons. of dept ch.

**THAR 4995. Independent Study in Theatre Arts. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.; cons. of artistic director.

**THAR 4997. Senior Capstone. 3 cr. hrs.**

In order to demonstrate artistic proficiency, students go beyond what has been learned in the classroom, studio, and stage, and begin to replicate the world students will encounter upon graduation. A capstone project requires student to utilize not only their core skills but to develop new "real world" skills they will need in their profession, such as decision making, presentation, and communication skills. This project incorporates and synthesizes knowledge gained through coursework within the Performing Arts curriculum. Senior Capstone Projects normally take place in the spring of the final year of study. Prereq: THAR major and Sr. stndg.

**THAR 4999. Senior Thesis. 1-3 cr. hr.**

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Prereq: Cons. of dept ch.



## College of Education

### From the Dean

College of Education website (<http://www.marquette.edu/education/index.shtml>)

Welcome!

The College of Education (COED) takes great pride in preparing outstanding teachers, school leaders, counselors, counseling psychologists, student affairs administrators, and university faculty. Our aim is to develop exemplary human service professionals -- individuals who will *"Be The Difference"* in their schools, institutions, organizations and communities.

All academic programs in the College of Education are deeply rooted in the tenets of social justice. Our students develop strongly held ideals of care, respect and advocacy for the well-being of all humankind under the guidance of caring faculty who are exceptional teachers and mentors and prominent scholars.

In addition, our students and faculty engage in a wide range of outreach activities, partnering with our many shareholders in urban, suburban and rural schools and communities, human service agencies and professional organizations. Our outreach efforts include hosting the Hartman Literacy and Learning Center for at-risk readers and directing the Behavior Clinic (at Penfield Children's Center), which specializes in helping troubled pre-school children. We also exercise community leadership through our work with the *Greater Milwaukee Catholic Education Consortium* (GMCEC) and our popular *Marquette Educator* blog.

William Henk, Ph.D.  
Dean, College of Education

## Degrees Offered

Students who complete the teacher education program at Marquette University graduate with a double major: a major in education and a major in an academic content area. All education students will be assigned to an adviser in the College of Education, as well as, to an adviser in their academic content area. The bachelor of science degree is conferred by the College of Education.

The degrees of Master of Arts, Master of Education, and Doctor of Philosophy are offered by the College of Education. The college also offers the following certificates: principal, director of instruction, superintendent, reading teacher, reading specialist, middle childhood/early adolescence (grades 1-8) education and early adolescence/adolescence (grades 6-12) education. Details for these programs are contained in the Graduate Bulletin.

## Admission Requirements

Students must apply for formal admission to the Teacher Education Program through the Office of Teacher Education located in the College of Education. The admission and retention requirements at Marquette University meet the requirements established by the Wisconsin Department of Public Instruction.

To be formally admitted to the Teacher Education Program students must:

- Achieve a GPA of 2.750 in a minimum of 40 credits of undergraduate course work.
- Obtain passing scores on the Praxis I Academic Skills Test.
- Demonstrate proficiencies through the submission of selected assignments associated with courses in the professional education sequence.

Applications for admission to the program are reviewed each semester. Students who do not meet the state mandated 2.750 GPA requirement may file an appeal for admission under the 10 percent rule provided the remaining requirements have been met. Further, students who do not achieve passing scores on all three components of the Praxis I assessment (after a minimum of two attempts) may file an appeal for admission under the 10 percent rule provided that the remaining requirements have been met. The state allows each institution to admit up to 10 percent of its students who have not achieved the required grade point average or passed the Praxis I assessment.



## Accreditation

The College of Education is a member of the American Association of Colleges for Teacher Education. All programs are accredited by the North Central Association, the state of Wisconsin and the National Council for Accreditation of Teacher Education.

## Certification

The Wisconsin Department of Public Instruction approves the teacher preparation program offered by Marquette University. This approval includes the middle childhood/early adolescence (grades 1-8) sequence, the early adolescence/adolescence (grades 6-12) sequence and the majors and minors described in the following pages. A student who satisfactorily completes an education major (professional course sequence) and an academic major, demonstrates mastery of the College of Education standards as evidenced by satisfactory performance on selected assignments and obtains passing scores on the appropriate Praxis II content area test can be recommended for certification in Wisconsin. Completion of course work is a necessary but not sufficient condition for certification. The professional judgment of faculty, supervisors, and Teacher Education Program administrators enters into the final decision. A student must complete an application for certification and pay a processing fee to the Wisconsin Department of Public Instruction (DPI). Applications are available in the Office of Teacher Education, Schroeder Complex 146, or on the DPI website (<http://dpi.wi.gov/tepd/licensing.html>).

Changes mandated by the Wisconsin Department of Public Instruction are ongoing. These changes may require revision of the programs of study and the certification procedures described on the pages which follow.

A student who plans to teach in a state other than Wisconsin after graduation should recognize that reciprocal certification agreements with other states change from time to time. The student should directly contact the respective state's department of education to obtain its certification requirements and licensure application procedures. If specific courses are needed for certification other than those required for Wisconsin, students should plan their programs of study accordingly. Certification levels available to Marquette students are middle childhood/early adolescence (grades 1-8) and early adolescence/adolescence (grades 6-12).

## Academic Regulations

### Attendance

Because absence from class will prevent a student from getting the full benefit of a course and because in many courses, each student's involvement contributes to the learning process for all other students in the class, the college has adopted the University Attendance Policy (p. 62) for all of its undergraduate courses.

### Background Checks, Drug Testing

A criminal background check is required of each student prior to participation in field work and student teaching. In addition, applicants for Wisconsin state teaching licensure are checked through the Wisconsin Criminal Investigation Bureau. Drug testing may also be required. The results of these checks and/or tests will affect the student's eligibility to participate in field work and/or student teaching.

### Coaching Courses

Students may seek to enhance their job opportunities by enrolling in coaching courses: EDUC 1600 Principles, Problems and Psychology of Coaching and EDUC 1800 Theory and Practice in Coaching Team Sports.

### Field Experiences

Education students participate in field experiences at public, private, and parochial schools in the Milwaukee area. The Wisconsin Department of Public Instruction (DPI) requires a minimum of 100 field hours to be completed prior to student teaching. Of these, the College of Education requires that a minimum of 50 hours must be completed in diverse settings with individuals whose backgrounds differ from those of the field students. Although Marquette University's field experience requirements exceed those mandated by the DPI, students must satisfy Marquette's requirements. Marquette University's College of Education has established close, working relationships with several schools in the greater Milwaukee area.

### Retention in Program

The Wisconsin Department of Public Instruction requires that students achieve a cumulative 2.750 GPA and a 2.750 GPA in their major, minor, and professional education sequence as well as obtain passing scores on the appropriate Praxis II content area test in order to be approved for student teaching and to be licensed. The College of Education does not accept courses with a grade of CD or lower to meet the requirement in the professional education sequence. Courses with these grades must be repeated. Anyone with questions related to admission or retention should contact the Office of Teacher Education. For more information see the College of Education Student Handbook ([http://www.marquette.edu/education/current\\_students/documents/undergradhandbook2010.pdf](http://www.marquette.edu/education/current_students/documents/undergradhandbook2010.pdf)).

# Middle Childhood/Early Adolescence Teacher Preparation (Grades 1-8)

The middle childhood/early adolescence teacher education program leads to a teaching license for grades 1 through 8. Students who select this program must meet the College of Education's admission and retention requirements and must complete the following components:

1. The University Core of Common Studies (UCCS)
2. An Elementary/Middle Education major, which includes specific state-mandated general education requirements
3. An academic major from the Klingler College of Arts and Sciences or the Diederich College of Communication

Students who intend to complete the teacher education program through the Marquette University College of Education are strongly encouraged to meet with the director of undergraduate advising in the Office of Teacher Education as early as possible to avoid delays in their program.

## Academic Majors

### Klingler College of Arts and Sciences

- Science
- English
- French
- German
- History
- Latin
- Mathematics
- Political Science
- Psychology
- Sociology
- Spanish

### Diederich College of Communication

- Communication Studies
- Journalism
- Theatre Arts

## University Core of Common Studies / Education Core Requirements

### Rhetoric (R)

|                    |                            |   |
|--------------------|----------------------------|---|
| ENGL 1001          | Rhetoric and Composition 1 | 3 |
| ENGL 1002          | Rhetoric and Composition 2 | 3 |
| or COMM 1100       | Contemporary Presentation  |   |
| Total Credit Hours |                            | 6 |

### Mathematical Reasoning (MR)

|                    |   |   |
|--------------------|---|---|
| MATH 2030          | Problem Solving and Reasoning for Teachers            | 3 |
| MATH 2031          | Number Systems and Operations for Elementary Teachers | 2 |
| MATH 2032          | Algebra and Geometry for Teachers                     | 2 |
| Total Credit Hours |   | 7 |

### Individual and Social Behavior (ISB)

|                    |                   |   |
|--------------------|-------------------|---|
| POSC 2201          | American Politics | 3 |
| Total Credit Hours |                   | 3 |

### Diverse Cultures (DC)

|                    |  |   |
|--------------------|--|---|
| EDUC 1210          | Introduction to Schooling in a Diverse Society | 3 |
| Total Credit Hours |  | 3 |

### Literature and Performing Arts (LPA)

|  |  |   |
|--|--|---|
| Any course approved for the UCCS LPA requirement |  | 3 |
| Total Credit Hours                               |  | 3 |

### Histories of Cultures and Societies (HCS)

|              |                                  |   |
|--------------|----------------------------------|---|
| HIST 1101    | Introduction to American History | 3 |
| HIST 1301    | Survey of Latin America          | 3 |
| or HIST 1401 | Africa                           |   |

|                    |           |   |
|--------------------|-----------|---|
| or HIST 1501       | East Asia |   |
| Total Credit Hours |           | 6 |

### Science and Nature (SN)

|                    |                                    |   |
|--------------------|------------------------------------|---|
| ARSC 1020          | Major Concepts in Modern Science 1 | 4 |
| ARSC 1021          | Major Concepts in Modern Science 2 | 4 |
| Total Credit Hours |                                    | 8 |

### Human Nature and Ethics (HNE)

|                    |                            |   |
|--------------------|----------------------------|---|
| PHIL 1001          | Philosophy of Human Nature | 3 |
| PHIL 2310          | Theory of Ethics           | 3 |
| Total Credit Hours |                            | 6 |

### Theology (T)

|  |                          |   |
|--|--------------------------|---|
| THEO 1001                                      | Introduction to Theology | 3 |
| THEO 2000-2410 elective approved from the UCCS |                          | 3 |
| Total Credit Hours                             |                          | 6 |

### Additional College Curriculum Requirements 0-8 credits

Foreign Language competence through the elementary college level (1001 & 1002)

## Elementary/Middle Education Major

To be eligible for the middle childhood/early adolescence teaching license, students must complete the following courses offered by the College of Education:

|           |  |   |
|-----------|--|---|
| EDUC 1210 | Introduction to Schooling in a Diverse Society                                   | 3 |
| EDUC 1964 | Teaching Elementary Mathematics  | 1 |
| EDUC 2964 | Teaching Middle School Mathematics   | 1 |
| EDUC 1220 | Psychology of Human Development in Children and Adolescents in a Diverse Society | 3 |
| EDUC 2227 | Introduction to Learning and Assessment  | 3 |
| EDUC 4217 | Children and Youth with Exceptional Needs  | 3 |
| EDUC 2330 | Integrating the Arts Across the Curriculum                                       | 3 |

|                              |   |       |
|------------------------------|---|-------|
| EDUC 4357                    | Teaching Elementary Reading, Language Arts, and Children's Literature 2 | 4     |
| EDUC 4297                    | Teaching in the Middle School   | 4     |
| EDUC 4317                    | Teaching Elementary Level Science                                       | 3     |
| EDUC 3240                    | Critical Inquiry into Contemporary Issues                               | 3     |
| EDUC 4337                    | Teaching Elementary Social Studies                                      | 1-3   |
| EDUC 4540                    | Philosophy of Education   | 3     |
| EDUC 4966                    | Student Teaching: Elementary/Middle                                     | 9-15  |
| Students must also complete: |   |       |
| MATH 2030                    | Problem Solving and Reasoning for Teachers                              | 3     |
| MATH 2031                    | Number Systems and Operations for Elementary Teachers                   | 2     |
| MATH 2032                    | Algebra and Geometry for Teachers                                       | 2     |
| Total Credit Hours           |   | 51-59 |

Students must check with their advisers in the College of Education with regard to sequence and admission requirements. EDUC 4966 Student Teaching: Elementary/Middle, is the last course to be completed in the program. Students must apply and be approved by the Office of Teacher Education to student teach.

## Bilingual-Bicultural Concentration

To be eligible for a license in bilingual-bicultural education, students must complete the following courses in addition to the other major courses in Education:

|                    |  |    |
|--------------------|--|----|
| EDUC 4230          | Learning and Linguistic Diversity                            | 3  |
| EDUC 4277          | Theory and Methods of Teaching Bilingual-Bicultural Learners | 3  |
| SPAN 3310          | Peoples and Cultures of Spanish America                      | 3  |
| SPAN 4140          | Spanish Second Language Acquisition                          | 3  |
| SPAN 4320          | Contemporary Issues in the Hispanic World                    | 3  |
| Total Credit Hours |  | 15 |

## Early Adolescence/Adolescence Teacher Preparation (Grades 6-12)

The early adolescence/adolescence teacher education program leads to a teaching license for grades 6 through 12. Students who select this program must meet the College of Education's admission and retention requirements and must complete the following components:

1. The University Core of Common Studies (UCCS).
2. A Middle/Secondary Education major, which includes specific state-mandated education requirements.
3. An academic major from the Klingler College of Arts and Sciences or the Diederich College of Communication.

The approved majors and minors for teaching certification through Marquette have been cooperatively developed by the College of Education and the colleges and departments of the university. All students intending to teach at the early adolescence/adolescence level must complete at least one academic major in addition to their Middle/Secondary Education major.

Students who intend to complete the teacher education program through the Marquette University College of Education are strongly encouraged to meet with the director of undergraduate advising in the Office of Teacher Education as early as possible to avoid delays in their program.

## Academic Majors

### Klingler College of Arts and Sciences Academic Majors

- Biology
- Broad Field Science
- Chemistry
- Economics
- English
- French
- German
- History
- Latin
- Mathematics
- Physics
- Political Science
- Psychology

- Sociology
- Spanish

**Diederich College of Communication Majors**

- Communication Studies
- Journalism
- Theatre Arts

**Certifiable Minors at the Secondary Level**

- Biology
- Broad Field Social Science
- Chemistry
- Economics
- English
- History
- Latin
- Mathematics
- Physics
- Political Science
- Psychology
- Sociology

**University Core of Common Studies / Education Core Requirements**

**Rhetoric (R)**

|                    |                            |   |
|--------------------|----------------------------|---|
| ENGL 1001          | Rhetoric and Composition 1 | 3 |
| ENGL 1002          | Rhetoric and Composition 2 | 3 |
| or COMM 1100       | Contemporary Presentation  |   |
| Total Credit Hours |                            | 6 |



**Mathematical Reasoning (MR)**

|                                     |   |
|-------------------------------------|---|
| Any MR course approved for the UCCS | 3 |
| Total Credit Hours                  | 3 |

**Individual and Social Behavior (ISB)**

|                                      |   |
|--------------------------------------|---|
| Any ISB course approved for the UCCS | 3 |
| Total Credit Hours                   | 3 |

**Diverse Cultures (DC)**

|                    |  |   |
|--------------------|--|---|
| EDUC 1210          | Introduction to Schooling in a Diverse Society | 3 |
| Total Credit Hours |  | 3 |

**Literature and Performing Arts (LPA) 3 credits**

|                                      |   |
|--------------------------------------|---|
| Any LPA course approved for the UCCS | 3 |
| Total Credit Hours                   | 3 |

**Histories of Cultures and Societies (HCS)**

|                    |   |   |
|--------------------|---|---|
| HIST 1001          | Growth of Western Civilization to 1715    | 3 |
| or HIST 1002       | Growth of Western Civilization since 1715 |   |
| HIST 1301          | Survey of Latin America                   | 3 |
| or HIST 1401       | Africa                                    |   |
| or HIST 1501       | East Asia                                 |   |
| Total Credit Hours |   | 6 |

**Science and Nature (SN)**

|                    |                                    |   |
|--------------------|------------------------------------|---|
| ARSC 1020          | Major Concepts in Modern Science 1 | 4 |
| ARSC 1021          | Major Concepts in Modern Science 2 | 4 |
| Total Credit Hours |                                    | 8 |

**Human Nature and Ethics (HNE)**

|                    |                            |   |
|--------------------|----------------------------|---|
| PHIL 1001          | Philosophy of Human Nature | 3 |
| PHIL 2310          | Theory of Ethics           | 3 |
| Total Credit Hours |                            | 6 |

**Theology (T)**

|  |                          |   |
|--|--------------------------|---|
| THEO 1001                                      | Introduction to Theology | 3 |
| THEO 2000-2410 elective approved from the UCCS |                          | 3 |
| Total Credit Hours                             |                          | 6 |

**Additional College Curriculum Requirements 0-8 credits**

Foreign Language competence through the elementary college level (1001 and 1002).

**Additional Wisconsin Department of Public Instruction Requirement 3 credits**

Fine Arts

**Broad Field Science Major with Teaching Minors in Biology, Chemistry, or Physics**

A person with a Broad Field Science license may teach any science class at the early adolescence – adolescence level, up through grade 10, and any basic or fusion science class in grades 11-12 that is not: A) a semester-long discrete course in a science subcategory – e.g. life and environmental science; B) an honors, IB, or advanced placement course; C) part of the college preparatory sequence and/or an elective course with more depth of content than basic courses. To teach a course under the criteria in A, B, or C (above), the candidate must hold a license in that subject area.

Interested students should see the chairs of biology, chemistry, or physics, their advisers, and the College of Education director of undergraduate advising.

Students completing all of the course work earn a broad field science teaching major and a teaching minor in the specific science area of study.

**Courses common to all broad field science majors are:**

|           |  |   |
|-----------|--|---|
| BIOL 1001 | General Biology 1                      | 3 |
| BIOL 1002 | General Biology 2                      | 3 |
| BIOL 2001 | Principles of Biological Investigation | 3 |
| CHEM 1001 | General Chemistry 1                    | 4 |
| CHEM 1002 | General Chemistry 2                    | 4 |

|                    |   |    |
|--------------------|---|----|
| CHEM 2111          | Organic Chemistry 1                             | 4  |
| or CHEM 2113       | Organic Chemistry for Majors 1                  |    |
| PHYS 1001          | General Physics 1                               | 4  |
| or PHYS 1003       | General Physics with Introductory Calculus 1    |    |
| or PHYS 1013       | Classical and Modern Physics with Calculus 1    |    |
| PHYS 1002          | General Physics 2                               | 4  |
| or PHYS 1004       | General Physics with Introductory Calculus 2    |    |
| or PHYS 1014       | Classical and Modern Physics with Calculus 2    |    |
| PHYS 1009          | Earth and Environmental Physics                 | 3  |
| BIOL 4101          | Biochemistry and the Molecular Basis of Biology | 3  |
| Total Credit Hours |   | 35 |

**Biology minors must take the following:**

|                                    |   |    |
|------------------------------------|---|----|
| CHEM 2112                          | Organic Chemistry 2                             | 4  |
| or CHEM 2114                       | Organic Chemistry for Majors 2                  |    |
| CHEM 3201                          | Quantitative Analysis                           | 4  |
| BIOL 2201                          | Genetics  | 3  |
| BIOL 4101                          | Biochemistry and the Molecular Basis of Biology | 3  |
| One additional BIOL course         |   | 3  |
| MATH 1410                          | Calculus for the Biological Sciences            | 3  |
| or MATH 1450                       | Calculus 1                                      |    |
| One additional MATH or COSC course |   | 3  |
| Total Credit Hours                 |   | 23 |

**Chemistry minors must take the following:**

|              |   |   |
|--------------|---|---|
| CHEM 2112    | Organic Chemistry 2                             | 4 |
| or CHEM 2114 | Organic Chemistry for Majors 2                  |   |
| CHEM 3201    | Quantitative Analysis                           | 4 |
| MATH 1410    | Calculus for the Biological Sciences            | 3 |
| or MATH 1450 | Calculus 1                                      |   |
| BIOL 4101    | Biochemistry and the Molecular Basis of Biology | 3 |

|                    |                                  |    |
|--------------------|----------------------------------|----|
| COSC 1000          | Introduction to Computer Science | 3  |
| Total Credit Hours |                                  | 17 |

### Physics minors must take the following:

|                    |                                      |    |
|--------------------|--------------------------------------|----|
| PHYS 2005          | Modern Physics: The States of Matter | 3  |
| PHYS 2005          | Modern Physics: The States of Matter | 3  |
| MATH 1450          | Calculus 1                           | 4  |
| MATH 1451          | Calculus 2                           | 4  |
| MATH 2450          | Calculus 3                           | 4  |
| Total Credit Hours |                                      | 18 |

### Noyce Scholar Program

The Noyce Scholar Program provides a unique educational scholarship opportunity for students to become middle/secondary STEM (Science, Technology, Engineering, Mathematics) teachers. This program is available to students in the Helen Way Klingler College of Arts and Sciences, the College of Education, and the College of Engineering. Students must apply to the program during the second semester of their sophomore year. Admission is competitive, and space is limited. For more information, students should contact the Office of Teacher Education.

### Middle/Secondary Education Major

To be eligible for an early adolescence/adolescence teaching license, students must complete the following courses in the College of Education:

|  |  |    |
|--|--|----|
| EDUC 1210  | Introduction to Schooling in a Diverse Society                                   | 3  |
| EDUC 1220  | Psychology of Human Development in Children and Adolescents in a Diverse Society | 3  |
| EDUC 2227  | Introduction to Learning and Assessment  | 3  |
| EDUC 4217  | Children and Youth with Exceptional Needs  | 3  |
| EDUC 2037  | Literacy in the Content Areas  | 3  |
| EDUC 4297  | Teaching in the Middle School  | 4  |
| EDUC 3240  | Critical Inquiry into Contemporary Issues  | 3  |
| EDUC 4540  | Philosophy of Education  | 3  |
| EDUC 4965  | Student Teaching: Middle/Secondary   | 15 |
| And one advanced methods course in their teaching major/minor. |  |    |
| Total Credit Hours   |  | 40 |

Students must check with their advisers in the College of Education in regard to sequence and admission requirements. EDUC 4965 Student Teaching: Middle/Secondary, is the last course to be

completed in the program. Students must apply and be approved by the Office of Teacher Education to student teach.

## Bilingual-Bicultural Concentration

To be eligible for a license in bilingual-bicultural education, students must complete the following courses in addition to the other major courses in Education:

|                    |  |    |
|--------------------|--|----|
| EDUC 4230          | Learning and Linguistic Diversity                            | 3  |
| EDUC 4277          | Theory and Methods of Teaching Bilingual-Bicultural Learners | 3  |
| SPAN 3310          | Peoples and Cultures of Spanish America                      | 3  |
| SPAN 4140          | Spanish Second Language Acquisition                          | 3  |
| SPAN 4320          | Contemporary Issues in the Hispanic World                    | 3  |
| Total Credit Hours |  | 15 |

## Broad Field Social Science Minor (Broad Field Social Studies)

The Interdisciplinary Minor in Broad Field Social Science is open only to students majoring in education with a second major in history, political science (only Track I: Politics, according the Political Science section of this bulletin), psychology or sociology. This minor allows students to prepare for the license extension offered by the Wisconsin Department of Public Instruction for Broad Field Social Studies. In order to complete the minor, students must take seven courses (21 credits) from among only those in the six groups of courses listed below. Students' courses for the minor must come from five of the six groups. None of the seven courses taken for the minor can be in a group that corresponds to the student's major.

### Group I

|           |   |   |
|-----------|---|---|
| HIST 1001 | Growth of Western Civilization to 1715    | 3 |
| HIST 1002 | Growth of Western Civilization since 1715 | 3 |
| HIST 1101 | Introduction to American History          | 3 |

### Group II

|           |                           |   |
|-----------|---------------------------|---|
| ANTH 1001 | Introductory Anthropology | 3 |
| ANTH 2101 | Cultural Anthropology     | 3 |
| ANTH 2203 | Human Geography           | 3 |

### Group III

|           |                                  |   |
|-----------|----------------------------------|---|
| SOCI 1001 | Principles of Sociology          | 3 |
| SOCI 2200 | The Family                       | 3 |
| SOCI 3200 | Social Problems in Urban Society | 3 |

## Group IV

|           |   |   |
|-----------|---|---|
| PSYC 1001 | General Psychology  | 3 |
| PSYC 2101 | Introduction to Life-Span Developmental Psychology for Nursing Students | 3 |
| PSYC 3201 | Introductory Social Psychology  | 3 |

## Group V

|           |                        |   |
|-----------|------------------------|---|
| POSC 2201 | American Politics      | 3 |
| POSC 2401 | Comparative Politics   | 3 |
| POSC 2601 | International Politics | 3 |

## Group VI

|           |                              |   |
|-----------|------------------------------|---|
| ECON 1001 | Introduction to Economics    | 3 |
| ECON 2003 | Principles of Microeconomics | 3 |
| ECON 2004 | Principles of Macroeconomics | 3 |

A person with a Broad Field Social Studies license may teach any social studies class at the early adolescence-adolescence level, up through grade 10 and any basic or fusion social studies class in grades 11-12 that is not: A) a semester-long discrete course in a social studies subcategory – e.g. psychology; B) an honors, IB, or advanced placement course; C) part of the college preparatory sequence and/or an elective course with more depth of content than basic courses. To teach a course under the criteria in A, B, or C (above), the candidate must hold a license in that subject area.

# Curricula Information

## Middle Childhood/Early Adolescence (Grades 1-8)

| Freshman                                 |       |                                   |       |
|--|-------|-----------------------------------|-------|
| First Term                               | Hours | Second Term                       | Hours |
| ARSC 1020 (UCCS (SN))                    | 4     | ARSC 1021                         | 4     |
| ENGL 1001 (UCCS (R))                     | 3     | ENGL 1002 or COMM 1100 (UCCS (R)) | 3     |
| FOLA 1 - Foreign Language 1              | 4     | FOLA 2 - Foreign Language 2       | 4     |
| THEO 1001 (UCCS (T))                     | 3     | HIST 1101 (UCCS (HCS))            | 3     |
| EDUC 1210 (UCCS (DC) requires fieldwork) | 3     | EDUC 1220                         | 3     |
|  | 17    |                                   | 17    |
| Sophomore                                |       |                                   |       |
| First Term                               | Hours | Second Term                       | Hours |
| UCCS (LPA)                               | 3     | POSC 2201 (UCCS (ISB))            | 3     |
| HIST 1301, 1401, or 1501                 | 3     | THEO 2000-2410 UCCS (T)           | 3     |
| PHIL 1001 (UCCS (HNE))                   | 3     | Major                             | 3     |
| Major                                    | 3     | Major                             | 3     |
| Major                                    | 3     | EDUC 2330                         | 3     |
| EDUC 2227 (requires fieldwork)           | 3     | EDUC 4317 (requires fieldwork)    | 3     |
| Field Experience I                       |       |                                   |       |
|  | 18    |                                   | 18    |
| Junior                                   |       |                                   |       |
| First Term                               | Hours | Second Term                       | Hours |
| MATH 2030 (UCCS (MR))                    | 3     | MATH 2031                         | 2     |
| PHIL 2310 (UCCS (HNE))                   | 3     | EDUC 1964 (requires fieldwork)    | 1     |
| Major                                    | 3     | Major                             | 3     |
| Major                                    | 3     | Major                             | 3     |
| EDUC 2347 (requires fieldwork)           | 4     | EDUC 3240                         | 3     |
| EDUC 4217 (requires fieldwork)           | 3     | EDUC 4337 (requires fieldwork)    | 1-3   |
| Field Experience II                      |       | EDUC 4357 (requires fieldwork)    | 4     |

|                                |              |                     |              |
|--------------------------------|--------------|---------------------|--------------|
|                                |              | Field Experience II |              |
|                                | 19           |                     | 17-19        |
| <b>Senior</b>                  |              |                     |              |
| <b>First Term</b>              | <b>Hours</b> | <b>Second Term</b>  | <b>Hours</b> |
| MATH 2032                      | 2            | EDUC 4966           | 9-15         |
| EDUC 2964 (requires fieldwork) | 1            |                     |              |
| Major                          | 3            |                     |              |
| Major                          | 3            |                     |              |
| EDUC 4964 (requires fieldwork) | 4            |                     |              |
| EDUC 4297 (requires fieldwork) | 4            |                     |              |
| EDUC 4540                      | 3            |                     |              |
| Senior Level Practicum         |              |                     |              |
|                                | 20           |                     | 9-15         |
| Total credit hours: 135-143    |              |                     |              |

**Note:** Some majors may require more major courses than the number of courses listed.

## Early Adolescence/Adolescence (Grades 6-12)

|  |              |                                   |              |
|--|--------------|-----------------------------------|--------------|
| <b>Freshman</b>                          |              |                                   |              |
| <b>First Term</b>                        | <b>Hours</b> | <b>Second Term</b>                | <b>Hours</b> |
| ARSC 1020 (UCCS (SN))                    | 4            | ARSC 1021                         | 4            |
| ENGL 1001 (UCCS (R))                     | 3            | ENGL 1002 or COMM 1100 (UCCS (R)) | 3            |
| FOLA I - Foreign Language I              | 4            | FOLA II - Foreign Language II     | 4            |
| THEO I UCCS (T)                          | 3            | HIST 1301, 1401, or 1501          | 3            |
| EDUC 1210 (UCCS (DC) requires fieldwork) | 3            | EDUC 1220                         | 3            |
|  | 17           |                                   | 17           |
| <b>Sophomore</b>                         |              |                                   |              |
| <b>First Term</b>                        | <b>Hours</b> | <b>Second Term</b>                | <b>Hours</b> |
| HIST 1001 or 1002 (UCCS (HCS))           | 3            | UCCS (ISB)                        | 3            |
| MATH UCCS (MR)                           | 3            | PHIL 1001 (UCCS (HNE))            | 3            |
| Major                                    | 3            | Major                             | 3            |



|  |              |  |              |
|--|--------------|--|--------------|
| Major                                    | 3            | Major                                    | 3            |
| EDUC 2227 (requires fieldwork)           | 3            | Elective                                 | 3            |
| Field Experience I                       |              |  |              |
|  | 15           |  | 15           |
| <b>Junior</b>                            |              |  |              |
| <b>First Term</b>                        | <b>Hours</b> | <b>Second Term</b>                       | <b>Hours</b> |
| PHIL 2310 (UCCS (HNE))                   | 3            | THEO 2000-2410 UCCS (T)                  | 3            |
| Major                                    | 3            | Literature UCCS (LPA) - any approved lit | 3            |
| Major                                    | 3            | Major                                    | 3            |
| Elective                                 | 3            | Major                                    | 3            |
| EDUC 3240                                | 3            | EDUC 4540                                | 3            |
| EDUC 4217 (requires fieldwork)           | 3            | EDUC 4297 (requires fieldwork)           | 4            |
| Field Experience II                      |              | Junior Level Practicum                   |              |
|  | 18           |  | 19           |
| <b>Senior</b>                            |              |  |              |
| <b>First Term</b>                        | <b>Hours</b> | <b>Second Term</b>                       | <b>Hours</b> |
| Fine Arts elective                       | 3            | EDUC 4965 (requires fieldwork)           | 15           |
| Major                                    | 3            |  |              |
| Major                                    | 3            |  |              |
| EDUC 2037 (requires fieldwork)           | 3            |  |              |
| Advanced Methods (requires fieldwork)    | 3            |  |              |
| Elective, if needed to reach 128 credits |              |  |              |
| Field Experience III                     |              |  |              |
|  | 15           |  | 15           |
| Total credit hours: 131                  |              |  |              |

**Note:** Some majors may require more major courses than the number of courses listed.

## Facilities

### The Ralph C. Hartman Literacy and Learning Center

The Hartman Literacy and Learning Center is a facility within the College of Education, which supports undergraduate and graduate literacy related programs. The center library houses a children's literature collection, which is used by the College of Education students as well as children and families participating in the Marquette University Family Literacy Project, a collaboration between the university and neighborhood elementary schools. Students enrolled in EDUC 4964 Practicum: Teaching Elementary Level Reading participate in the Family Literacy Project by tutoring small groups of children in reading and writing after school. The Hartman Literacy and Learning Center provides faculty and staff to support and conduct research regarding the project.

## Course Descriptions

**EDUC 1210. Introduction to Schooling in a Diverse Society. 3 cr. hrs.**

Critical and reflective examination of assumptions about schooling in the United States including the impacts of race, ethnicity, class and gender; power and control in school and community contexts; and the concerns, demands, conditions, and rewards of the teaching profession. Field Experiences required.

**EDUC 1220. Psychology of Human Development in Children and Adolescents in a Diverse Society. 3 cr. hrs.**

Critical examination of physical, social, emotional, moral and cognitive development of children and adolescents, including variables (gender, socioeconomic status, race, ethnicity, language).

**EDUC 1500. Principles of Peer Facilitation Among College Students. 1-3 cr. hr.**

Theoretical, research, and applied principles of peer facilitation among college students, includes theories of student development; values clarification; principles of effective communication and methods to encourage an appreciation for individual differences within a diverse student population as applies in a Catholic, Jesuit, urban university. Prereq: Cons. of instr.

**EDUC 1600. Principles, Problems and Psychology of Coaching. 2 cr. hrs.**

Educational implications of sports. Rules, organization, equipment and ethics. Individual/social psychological attributes of athletes/coaches/programs. Use of psychology by coaches. Open to all students in the university.

**EDUC 1800. Theory and Practice in Coaching Team Sports. 2 cr. hrs.**

Principles and problems of coaching team sports. All major team sports are reviewed. Open to all students in the university.

**EDUC 1964. Teaching Elementary Mathematics. 1 cr. hr.**

Supervised experience in teaching elementary mathematics. Emphasis on learning how to uncover, understand and use children's mathematical thinking as the basis for making instructional decisions. Seminars and small group tutoring sessions are included. Prereq: MATH 2030. This course should be taken concurrently with MATH 2031.

**EDUC 2037. Literacy in the Content Areas. 3 cr. hrs.**

Interrelationship of reading, writing, speaking and listening as learning skills in the content areas. Included are methods and materials the teacher can use in the classroom setting to improve literacy skills in all content areas and integrate literature across the curriculum. Field experience required. Prereq: Admission to the Professional Program in the College of Education.

**EDUC 2227. Introduction to Learning and Assessment. 3 cr. hrs.**

Application of major theories of learning to instructional planning and assessment. Use of technologies to enhance learning and assessment. Prereq: EDUC 1210, College of Education students only.

**EDUC 2330. Integrating the Arts Across the Curriculum. 3 cr. hrs.**

Use of visual and performance arts (dance, music, film, theater) as well as newer forms of technology and multimedia to enhance learning and instruction across the K-12 curriculum. Prereq: EDUC 2227; Admission to the Professional Program in the College of Education.

**EDUC 2347. Teaching Elementary Reading, Language Arts, and Children's Literature 1. 4 cr. hrs.**

Teaching reading, language arts, and children's literature from a developmental perspective to diverse lower elementary learners. Emphasis on developing the relationship between the three literacy areas. Field experience required. Prereq: Admission to the Professional Program in the College of Education.

**EDUC 2964. Teaching Middle School Mathematics. 1 cr. hr.**

Prepares students to teach middle school mathematics through a problem solving approach. Guided participation in a middle school mathematics classroom with practicing teacher and university instructor for forty hours of fieldwork. Prereq: MATH 2031. This course should be taken concurrently with MATH 2032 and EDUC 4297.

**EDUC 3240. Critical Inquiry into Contemporary Issues. 3 cr. hrs.**

Analysis and critique of current issues in elementary, middle, and secondary education. Skill development in research, communication, and critical inquiry needed to foster social justice in schools. Prereq: EDUC 1210.

**EDUC 4007. Teaching Middle/Secondary Social Science. 3 cr. hrs.**

Application of teaching methods to social studies in middle and high schools. Field experience required. Prereq: EDUC 2227; Admission to the Professional Program in the College of Education.

**EDUC 4017. Teaching Middle/Secondary Science. 3 cr. hrs.**

Application of methods to teach inquiry-based science in the physical sciences, physics, biology, chemistry and environmental sciences at the middle/secondary level. Includes planning, preparation of materials, assessment, and use of technology aligned with National Science Education Standards and OSHA safety requirements. Field experience required. Prereq: EDUC 2227; Admission to the Professional Program in the College of Education.

**EDUC 4067. Strategies in Religious Education. 3 cr. hrs.**

Application of current catechetical theory and educational strategies to the teaching of religion. Development of curriculum objectives and assessments. Analysis of instructional materials and other resources for teaching religion. Open to all upper division students in the university. Admission to the Professional Program in the College of Education required.

**EDUC 4100. Foundations of Catholic Education. 3 cr. hrs.**

Traces the history and philosophy of Catholic education in the United States, with particular emphasis on the identity, mission and culture of Catholic schools as interpreted by generations of Church leaders and scholars. Prepares elementary and secondary pre-service teachers to apply educational theory to practice in the Catholic school settings.

**EDUC 4217. Children and Youth with Exceptional Needs. 3 cr. hrs.**

Introduction to children and adolescents with a wide range of exceptional needs. Addresses characteristics, causes, assessment, teaching strategies, and legal issues. Field experience required for certification students, optional for others. Prereq: EDUC 1220 or PSYC 3101 equiv.

**EDUC 4230. Learning and Linguistic Diversity. 3 cr. hrs.**

Covers three bodies of knowledge regarding language: basic principles of sociolinguistics, the nature of learning a second language or a second dialect, and theories of effective methods for teaching speakers of languages and dialects other than Standard English (e.g., bilingual education and/ or English as a second language instruction). Each of these bodies of knowledge will be contextualized in students' learning experiences and in teachers' classroom practices.

**EDUC 4277. Theory and Methods of Teaching Bilingual-Bicultural Learners. 3 cr. hrs.**

Study, application, and practice of theories and methods of delivering bilingual/bicultural instruction. Focus on first and second language learning strategies and culturally responsive teaching methods that reflect the language and culture of students living in bilingual/bicultural contexts. Prereq: EDUC 2227; Admission to the Professional Program in the College of Education.

**EDUC 4297. Teaching in the Middle School. 4 cr. hrs.**

Foundations, methods, and strategies for teaching at the middle school level. Lab required. Field experience required. Prereq: EDUC 1220 and EDUC 2227; Admission to the Professional Program in the College of Education.

**EDUC 4317. Teaching Elementary Level Science. 3 cr. hrs.**

Curriculum development and instructional methods for teaching inquiry-based science at the primary and upper elementary level. Includes preparation of materials, assessment, use of technology and field experiences. Field experience required. Prereq: EDUC 2227; Admission to the Professional Program in the College of Education.

**EDUC 4337. Teaching Elementary Social Studies. 1-3 cr. hr.**

Curriculum development, instructional strategies and techniques for teaching elementary social studies with emphasis on primary research skills. Includes preparation of materials, assessment and micro-teaching. Prereq: EDUC 2227; Admission to the Professional Program in the College of Education.

**EDUC 4357. Teaching Elementary Reading, Language Arts, and Children's Literature 2. 4 cr. hrs.**

Teaching reading, language arts, and children's literature from a developmental perspective to diverse upper elementary learners. Emphasis on developing the relationship between the three literacy areas and how social factors influence students' literacy learning. Field experience required. Prereq: EDUC 2347; Admission to the Professional Program in the College of Education.

**EDUC 4540. Philosophy of Education. 3 cr. hrs.**

Principles and methods of various classical and contemporary philosophies and their implications and applications in education. Attention to professional ethics and students' development of their own philosophies of education. Prereq: PHIL 1001.

**EDUC 4931. Topics in Education. 1-4 cr. hr.**

Various topics in education as identified in the Schedule of Classes.

**EDUC 4964. Practicum: Teaching Elementary Level Reading. 4 cr. hrs.**

Supervised experience in the teaching of reading to struggling readers. Emphasis on linking literacy assessment and instruction. Seminars and small group tutoring sessions are included. Prereq: Cons. of dept. ch.; Admission to the Professional Program in the College of Education.

**EDUC 4965. Student Teaching: Middle/Secondary. 15 cr. hrs.**

Full day, full term of public or private school teaching, Monday through Friday. Only EDUC 4540 may be taken during the term of this practicum. Regular on-site visitation by university faculty. Weekly seminar required. S/U grade basis. Fee. Prereq: EDUC 4297 and cons. of dept. ch.; Advanced methods course.

**EDUC 4966. Student Teaching: Elementary/Middle. 9-15 cr. hrs.**

Full day, half or full term of public or private school teaching, Monday through Friday. Only EDUC 4540 may be taken during this practicum. Regular on-site visitation by university faculty. Weekly seminar required. S/U grade basis. Fee. Prereq: EDUC 4297 and cons. of dept. ch.

**EDUC 4967. Student Teaching: Bilingual - Bicultural. 15 cr. hrs.**

Full day, full term of public or private school teaching, Monday-Friday. EDUC 4540 may be taken during the term of this practicum experience. Regular on-site visits by university faculty. This course extends beyond the Marquette term; students receive an IC grade initially. The IC will be changed to an S or U grade at the end of the student teaching experience. Fee. Prereq: EDUC 4927 and cons. of dept. ch.; Advanced Methods course.

**EDUC 4968. Student Teaching: Middle/Secondary Foreign Language. 6 cr. hrs.**

Full day, half term of public or private school teaching, Monday through Friday. EDUC 4540 may be taken during the term of this practicum. Regular on-site visitation by University faculty. Weekly seminar required. S/U grade assessment. Fee. Prereq: EDUC 4297 and cons. of dept. ch.; Admission to the College of Education.

**EDUC 4971. Noyce Teaching 1. 1-12 cr. hr.**

Introduces Noyce Scholars to the wide variety of exceptional needs of children and adolescents and the application of major theories of learning to instructional planning and assessment. Students will also study the interrelationship of reading, writing, speaking and listening as learning skills in the content areas. Field experiences will be integrated within the course as it is taught within an urban high school setting. Open only to Noyce Scholars.

**EDUC 4995. Independent Study in Education. 1-4 cr. hr.**

Readings on a particular problem or subject of interest to the student. A paper must be completed for each problem studied. Prereq: Cons. of dept. ch.



## College of Engineering

### From the Dean

College of Engineering website (<http://www.marquette.edu/engineering/>)

Welcome!

The College of Engineering is a student centered, hands-on learning combined with foundational courses in mathematics and the sciences, is a hallmark of our programs. Engineers of the future will need to be well grounded in not just engineering and science principles, but they will also need a strong foundation in the humanities, ethics, leadership, lifelong learning – education of the whole person. Our curriculum and programs are constantly evolving to promote discovery learning, to effectively prepare students for engineering in the modern world and to provide a strong foundation of whole-person education.

In fall 2011 we will open a new home for the College of Engineering on the corner of 16th Street and Wisconsin Avenue. Daily we ask ourselves “What are we going to do in that building to change lives?” Energy, clean water, access to health care and food are global problems and we need to participate in finding solutions. Our new home will provide exciting opportunities for learning, research and collaboration for students and faculty alike.

Robert H. Bishop, Ph.D., P.E.  
Opus Dean, College of Engineering

## College Mission Statement

The mission of the Marquette University College of Engineering is to excel in four critical areas:

- To prepare all students for successful careers based on a strong moral and ethical foundation
- To advance the state of the art in engineering
- To serve our professional and technical communities
- To contribute to our global society

These statements reflect the essential nature of the college. The motivation of the college centers about its desire to emphasize to the engineering community the intrinsic value of humankind and of the individuals who comprise it. This motivation flows directly from the fact that the college is an integral part of a Catholic, Jesuit university.



## Degrees Offered

### Degrees Offered

Marquette University confers the degree of bachelor of science in biomedical, civil, computer, electrical or mechanical engineering on those students who have satisfactorily completed one of the prescribed curricula in the majors within the departments of Biomedical Engineering, Civil, Construction and Environmental Engineering, Electrical and Computer Engineering, and Mechanical Engineering. Engineering students have the opportunity to earn a minor in another engineering field as well as in many other non-engineering areas.

The master of science degree is conferred upon recommendation by the Graduate School for candidates in biomedical, civil, electrical and computer, and mechanical engineering, and for candidates in health care technologies management. The master of engineering (M.E.) degree is conferred for candidates in biomedical engineering, the master of science in engineering management (M.S.E.M.) degree is conferred for candidates in engineering management, and the doctoral degree is conferred for candidates in biomedical, civil, electrical and computer, and mechanical engineering. Five certificates are offered in civil engineering and four certificates are offered in electrical engineering. Details on the master's, doctoral and certificate programs are contained in the Graduate Bulletin.

### Accreditation

The College of Engineering is a member of the American Society for Engineering Education. The biomedical, civil, computer, electrical and mechanical engineering programs are accredited by the Engineering Accreditation Commission of ABET; 111 Market Place, Suite 1050; Baltimore, MD 21202-4012; telephone: (410) 347-7700.

The construction engineering and management program is eligible for accreditation after its first graduating class.

## Admission Requirements

### Admission Requirements

**Freshman Admission:** Freshman applicants to the College of Engineering are expected to fulfill the admission requirements listed in the university section of this bulletin.

**Transfer Student (Advanced Standing) Admission:** Applicants who have been enrolled or registered in an institution of higher learning since high school graduation, including Marquette University, need a minimum grade average of 2.500 (based on a four-point system) in previous college work as a minimum of consideration. An applicant's entire academic performance will be evaluated in making an admission decision.

### Transfer Student (Advanced Standing)

The College of Engineering maintains formal agreements with various colleges for student transfer into selected engineering degree programs and for the transfer of advanced standing credits. The following institutions have engaged the College of Engineering to develop a structure for either 2+ programs, Pre-engineering or Dual Degree arrangements.

| School                            | Location     | Program             |
|-----------------------------------|--------------|---------------------|
| Fox Valley Technical College      | Appleton, WI | 2+3 Program         |
| Waukesha County Technical College | Waukesha, WI | 2+2 Program         |
| Gateway Technical College         | Racine, WI   | 2+3 Program         |
| Creighton University              | Omaha, NE    | Pre-Engineering     |
| Spring Hill College               | Mobile, AL   | Dual Degree Program |

For more information contact the office of the assistant dean for academic affairs.

## Majors Offered

The College of Engineering is made up of four departments which offer the following majors: the Department of Biomedical Engineering with majors in biocomputing, bioelectronics and biomechanics; the Department of Civil, Construction and Environmental Engineering with majors in civil engineering, environmental engineering and construction engineering and management; the Department of Electrical and Computer Engineering with majors in computer engineering and electrical engineering; the Department of Mechanical Engineering with a major in mechanical engineering.

## Graduation Requirements

The degree bachelor of science in biomedical, civil, computer, electrical or mechanical engineering may be conferred on students who successfully complete a curriculum as prescribed for the degree, and who have satisfied the following requirements:

- A minimum of 32 hours of upper-division course work must be completed at Marquette University. At least 15 hours must be either within the major or the required department courses shown in the senior year of the catalog showcase curriculum.
- A cumulative grade average of C or better in all engineering courses.
- A minimum of the number of semester hours required for the major.
- The completion of all required courses.
- Formal application for graduation filed in the office of the assistant dean for academic affairs no later than two weeks after the beginning of the candidate's last term.

## General Degree Requirements

All candidates for a baccalaureate degree in engineering must complete requirements for one of the majors on the following pages:

### **Department of Biomedical Engineering**

- Biocomputing
- Bioelectronics
- Biomechanics

### **Department of Civil, Construction and Environmental Engineering**

- Civil Engineering
- Construction Engineering and Management
- Environmental Engineering

### **Department of Electrical and Computer Engineering**

- Computer Engineering
- Electrical Engineering

### **Department of Mechanical Engineering**

- Mechanical Engineering

## University Core of Common Studies (UCCS) and College of Engineering Curricular Requirements

The College of Engineering curricula amplify and deepen the University Core of Common Studies (UCCS) requirements, which are fully described in the University Core of Common Studies section

in this bulletin. The implementation of the UCCS within each major is explicitly detailed in each department's bulletin section.

The following footnotes are referenced in the department curriculum for each of the various majors:

b University Core course

c The Core Electives must satisfy UCCS requirements in the following four Knowledge Areas: Diverse Cultures, Histories of Cultures and Societies, Individual and Social Behavior, and Literature/Performing Arts. See the university bulletin section on University Core of Common Studies for lists of acceptable courses.

d If the previous Core Electives span all four Knowledge Areas (as listed in the previous footnote), a three-credit free elective may be chosen. This situation may exist if one of the student's core electives is a "dual-application" core course, as described in the section on the University Core of Common Studies.

e The Theology Elective must be selected from the list of acceptable UCCS courses in the Theology Knowledge Area. See the university bulletin section on University Core of Common Studies.

f The UCCS Rhetoric Knowledge Area is satisfied by ENGL 1001 Rhetoric and Composition 1, and ENGL 1002 Rhetoric and Composition 2 or COMM 1100 Contemporary Presentation.

**Courses that satisfy both the UCCS and the College of Engineering curricula are outlined below:**

### Rhetoric (R)

|                    |                            |   |
|--------------------|----------------------------|---|
| ENGL 1001          | Rhetoric and Composition 1 | 3 |
| ENGL 1002          | Rhetoric and Composition 2 | 3 |
| or COMM 1100       | Contemporary Presentation  |   |
| Total Credit Hours |                            | 6 |

### Mathematical Reasoning (MR) 4-8 credits

|                    |            |   |
|--------------------|------------|---|
| MATH 1450          | Calculus 1 | 4 |
| Total Credit Hours |            | 4 |

### Individual and Social Behavior (ISB)

|                         |   |
|-------------------------|---|
| Any approved ISB course | 3 |
| <hr/>                   |   |
| Total Credit Hours      | 3 |

### Diverse Cultures (DC)

|                        |   |
|------------------------|---|
| Any approved DC course | 3 |
| <hr/>                  |   |
| Total Credit Hours     | 3 |

**Literature/Performing Arts (LPA)**

|                         |   |
|-------------------------|---|
| Any approved LPA course | 3 |
| Total Credit Hours      | 3 |

**Histories of Cultures and Societies (HCS)**

|                         |   |
|-------------------------|---|
| Any approved HCS course | 3 |
| Total Credit Hours      | 3 |

**Science and Nature (SN)**

|                    |  |    |
|--------------------|--|----|
| CHEM 1001          | General Chemistry 1                          | 4  |
| PHYS 1003          | General Physics with Introductory Calculus 1 | 4  |
| PHYS 1004          | General Physics with Introductory Calculus 2 | 4  |
| Total Credit Hours |  | 12 |

**Human Nature and Ethics (HNE)**

|                    |                            |   |
|--------------------|----------------------------|---|
| PHIL 1001          | Philosophy of Human Nature | 3 |
| PHIL 2310          | Theory of Ethics           | 3 |
| Total Credit Hours |                            | 6 |

**Theology (T)**

|                                     |                          |   |
|-------------------------------------|--------------------------|---|
| THEO 1001                           | Introduction to Theology | 3 |
| Any approved Theology UCCS Elective |                          | 3 |
| Total Credit Hours                  |                          | 6 |

New courses are approved for the UCCS each semester. For a regularly, updated list of approved UCCS courses, consult the Core of Common Studies website (<http://www.marquette.edu/programs/core/list.shtml>).

## Academic Regulations

Students in the College of Engineering are expected to comply with the academic requirements and regulations listed in the university section of this bulletin, along with all official college regulations. For College of Engineering policies, refer to the college website ([http://www.marquette.edu/engineering/students\\_policies.shtml](http://www.marquette.edu/engineering/students_policies.shtml)).

## Academic Honesty

The College of Engineering recognizes that any form or degree of academic dishonesty challenges the principles of truth and honesty, which are among the most important foundation principles of Marquette University. Consequently, the college treats matters of academic dishonesty as serious violations of academic trust and penalizes all students found to engage in such behavior. The reduction of academic dishonesty within the College of Engineering must be a cooperative enterprise of faculty, student and administrators.

Refer to the University Academic Honesty Policy and Procedures in the university section of this bulletin.

## Academic Load

The academic load of a student is measured by credit hours assigned to each course. The normal engineering program varies from 15 to 19 credit hours per term.

A Credit Overload Request form for permission to exceed 20 credit hours must be submitted for approval prior to registration to the assistant dean for academic affairs on forms available on the Office of the Registrar website ([http://www.marquette.edu/mucentral/registrar/policy\\_forms.shtml](http://www.marquette.edu/mucentral/registrar/policy_forms.shtml)).

## Attendance

Because absence from class will prevent a student from getting the full benefit of a course and because in many courses, each student's involvement contributes to the learning process for all other students in the class, the college has adopted the University Attendance Policy (p. 62) for all of its undergraduate courses.

## Background Checks, Drug Testing

Some degrees, majors and/or courses may require a student to submit to a criminal background check and/or drug testing. The results of those checks and/or tests may affect the student's eligibility to continue in that degree, major and/or course.

## Other Academic Policies

For a complete list of all College of Engineering academic policies, refer to the college website ([http://www.marquette.edu/engineering/students\\_policies.shtml](http://www.marquette.edu/engineering/students_policies.shtml)).

## Special Academic Programs

### The Cooperative Education Program

The Cooperative Education Program is an organized program integrating classroom work and practical work experience. Students in this program alternate periods of attendance at college with periods of employment in industry. The employment constitutes a regular, continuing and desirable element in the educational process. It is related to some phase of the field of study in which the student is engaged and should be diversified to afford a range of experience. The objective is balanced training; the combination of theory and practical work experience during the early years of professional development. The Engineering Cooperative Education Program (Co-op program) has been employed successfully at Marquette since 1919.

At Marquette, all students spend the first two years in the conventional academic program. Those not electing to participate in the Co-op Program continue through their last two years on the same conventional program. Admission to the Co-op Program is conditioned by: 1) the applicant's academic standing; 2) his/her general employability, possibly including United States citizenship; and 3) the number of openings made available by industry. It should therefore be regarded as a privilege to be sought after, one usually gained only by those best qualified.

Early in the sophomore year, students attend an engineering orientation class, GEEN 2952 Professional Development for Engineers, to learn about the Co-op Program's policies and procedures and the placement process. They then apply to the Co-op Program and pursue co-op placement by submitting resumes and interviewing with prospective employers. Students who are hired by co-op employers begin working during the summer or fall following completion of their sophomore year, or soon thereafter. The students participating in the Co-op Program are divided into three groups, which alternate between school and work on a planned basis. Typically, more than 230 students are in the Co-op Program at any given time and they are employed with more than 100 cooperating employers located in the Midwest and throughout the country.

### Normal Co-op Schedule

| Year                 | Term        | 16 mos.  | 15 mos.  | 12 mos.  |
|----------------------|-------------|----------|----------|----------|
| Freshman             | First Term  | S        | S        | S        |
| Freshman             | Second Term | S        | S        | S        |
| Sophomore            | Summer Term | V        | V        | V        |
| Sophomore            | First Term  | S        | S        | S        |
| Sophomore            | Second Term | S        | S        | S        |
| <b>Co-op Section</b> |             | <b>A</b> | <b>B</b> | <b>C</b> |
| Junior               | Summer Term | S        | W        | V        |
| Junior               | First Term  | W        | S        | S        |
| Junior               | Second Term | S        | W        | W        |
| Pre-Senior           | Summer Term | W        | S        | S        |
| Pre-Senior           | First Term  | S        | W        | W        |
| Pre-Senior           | Second Term | W        | S        | S        |



|        |             |   |   |   |
|--------|-------------|---|---|---|
| Senior | Summer Term | S | W | W |
| Senior | First Term  | W | S | S |
| Spring | Second Term | S | S | S |

*S=School V=Vacation W=Work Period*

The approved training programs provide for rapid progress of the Co-op student through the various phases of the firm's engineering processes, according to a planned schedule. The Co-op Program therefore gives the students an opportunity to combine their classroom learning with practical experience, it provides financial assistance to pay their education expenses, and it provides an orientation to both the world of work and career opportunities available. For the employers, the Co-op Program provides a ready-made training and recruitment program, it provides a good source of technical labor and it promotes college relations.

Since the cooperative education program is considered an integral part of a student's education, the Co-op student is a full-time student at Marquette University; whether he/she is in school or at work. When the Co-op student is at work, he/she is under the company's direct supervision. The student is subject to the rules of the company which may include background checks and/or drug screening. Wages are paid directly to the student. The university does not employ the student but cooperates with industry in arranging such employment. The Co-op Program provides one credit hour for each work period successfully completed. The Co-op student is required to follow an especially arranged Schedule of Classes while in school so as to accommodate his/her alternating status (in school, at work, etc.) and assure that sequential courses are scheduled in proper order. This includes summer sessions as noted on the Normal Co-op Schedule. Registration for each work period is required of all Co-ops, and credit is established and graded through enrollment in the appropriate Co-op Grading Period during the following school period. Three credit hours earned via Co-op work experience may be applied to Bachelor of Science degree requirements as a substitute for one technical elective course. For more information see the Co-op website ([http://www.marquette.edu/engineering/coop\\_eng/](http://www.marquette.edu/engineering/coop_eng/)).

## The Noyce Scholar Teaching Cooperative Education Program

The national demand for teachers of science, technology and math (STEM) continues to grow. This program prepares interested undergraduates to become licensed teachers who can help meet the STEM-related needs of our increasingly global society through the effective education of middle and high school students.

The Noyce Scholar Program is based on an adaptation of the cooperative education model that has successfully prepared Marquette University engineers for 90 years into a similar program of preparation for engineering and science students desiring to become STEM teachers. Through this uniquely adapted cooperative education model, intensive field experiences in education (i.e., teaching co-ops) are integrated with classroom instruction to meet the Wisconsin state standards for STEM teacher licensure. This program allows engineering students to complete their engineering and STEM teaching degree requirements in 5 years and may be customized for any of the engineering majors. The approved STEM majors for Wisconsin teaching certification include: biology, broad field science, chemistry, physics and mathematics.

## Teaching Co-op Schedule:

### Sophomore

Spring EDUC 1210 Introduction to Schooling in a Diverse Society plus engineering course work

Summer EDUC 1220 Psychology of Human Development in Children and Adolescents in a Diverse Society (middle school)

### Junior

Fall Teaching Co-op #1 (high school); EDUC 2037 Literacy in the Content Areas; EDUC 2227 Introduction to Learning and Assessment; EDUC 4217 Children and Youth with Exceptional Needs

Spring Engineering and STEM course work

Summer Project Based Learning Experience

### Pre-senior

Fall Engineering and STEM course work

Spring Teaching Co-op #2 (middle school); EDUC 4017 Teaching Middle/Secondary Science or MATH 3030 The Teaching of Mathematics; EDUC 4297 Teaching in the Middle School

Summer Engineering and STEM course work (as needed)

### Senior

Fall Teaching Co-op #3 (middle or high school); EDUC 4965 Student Teaching: Middle/Secondary

Spring Engineering and STEM course work

Specific degree requirements for the secondary middle/secondary education and STEM teaching majors include:

|                           |  |   |
|---------------------------|--|---|
| EDUC 1210                 | Introduction to Schooling in a Diverse Society (Meets UCCS Diverse Cultures)     | 3 |
| EDUC 1220                 | Psychology of Human Development in Children and Adolescents in a Diverse Society | 3 |
| EDUC 2037                 | Literacy in the Content Areas  | 3 |
| EDUC 2227                 | Introduction to Learning and Assessment  | 3 |
| EDUC 4017<br>or MATH 3030 | Teaching Middle/Secondary Science<br>The Teaching of Mathematics                 | 3 |
| EDUC 4217                 | Children and Youth with Exceptional Needs  | 3 |
| EDUC 4297                 | Teaching in the Middle School  | 4 |

|                    |                                    |    |
|--------------------|------------------------------------|----|
| EDUC 4965          | Student Teaching: Middle/Secondary | 15 |
| Total Credit Hours |                                    | 37 |

These degree requirements are addressed during the aforementioned teaching co-op experiences.

- Biology: see Major in Biology for the Professions (p. 147)
- Broad Field Science: see College of Education, Broad Field Science Major with Teaching Minors in Biology, Chemistry or Physics (p. 602)
- Chemistry: see Major in Chemistry for the Professions (p. 168)
- Physics: see Major in Physics (p. 293)
- Mathematics: see Major in Mathematics (p. 277)

Students must also complete HIST 1001 Growth of Western Civilization to 1715 or HIST 1002 Growth of Western Civilization since 1715 (meets UCCS Histories of Cultures and Societies) and any approved UCCS Literature and Performing Arts literature course.

For more information, see the STEM Education Co-op website (p. 599) .

## Minor in Engineering Ethics and Values (ENEV)

The goal of this program is to involve engineering students in an elective program which will help them to: (a) understand the impact of Christian, Catholic and Jesuit values on engineering ethics, (b) recognize current engineering ethical issues and (c) strengthen their moral resolve to act courageously on these issues once they enter the engineering profession.

The minor in engineering ethics and values requirements include:

|                               |   |   |
|-------------------------------|---|---|
| Required Courses              |   | 9 |
| PHIL 1001                     | Philosophy of Human Nature                                |   |
| PHIL 2310                     | Theory of Ethics  |   |
| THEO 1001                     | Introduction to Theology                                  |   |
| Four ENEV colloquia           |   | 4 |
| ENEV 1952                     | Ethics and Values Colloquium 1                            |   |
| ENEV 2952                     | Ethics and Values Colloquium 2                            |   |
| ENEV 3952                     | Ethics and Values Colloquium 3                            |   |
| ENEV 4952                     | Ethics and Values Colloquium 4                            |   |
| One of the following courses: |   | 3 |
| BIEN 4931                     | Topics in Biomedical Engineering (selected sections only) |   |
| CEEN 3720                     | Decent and Affordable Housing                             |   |
| CEEN 4740                     | Health, Environment, and Infrastructure in Latin America  |   |
| Two of the following courses: |   | 6 |

|                    |   |    |
|--------------------|---|----|
| BIEN 4931          | Topics in Biomedical Engineering (selected sections only) |    |
| CEEN 3720          | Decent and Affordable Housing                             |    |
| CEEN 4740          | Health, Environment, and Infrastructure in Latin America  |    |
| MANA 3002          | Business and Its Environment                              |    |
| PHIL 3350          | Philosophy of the Environment                             |    |
| PHIL 3740          | Technology and the Human Condition                        |    |
| PHIL 4320          | Contemporary Ethical Problems                             |    |
| PHIL 4330          | Business Ethics   |    |
| PHIL 4335          | Biomedical Ethics   |    |
| SOCI 3520          | Health Care Systems                                       |    |
| SOCI 5400          | Social Inequality   |    |
| SOWJ 1001          | Introduction to Social Welfare and Justice                |    |
| THEO 2400          | Christian Discipleship                                    |    |
| THEO 4430          | Theology and the Natural Sciences                         |    |
| THEO 4440          | Foundations of Ecological Ethics                          |    |
| THEO 4450          | Medical Ethics  |    |
| Total Credit Hours |   | 22 |

For more information, see the assistant dean for academic affairs or the Engineering Ethics and Values website ([http://www.marquette.edu/engineering/students\\_ethics.shtml](http://www.marquette.edu/engineering/students_ethics.shtml)).

## Concentration in Engineering Service

The Concentration in Engineering Service provides an integrated opportunity for engineering students to be involved in engineering-related service learning and reflection throughout their undergraduate studies. These experiences also provide an awareness of an engineer's professional responsibilities to the community at large, and future opportunities for such involvement at the local, national and/or international levels.

This concentration requires completion of a minimum of 12 credits including:

Local Service - Service-learning UCCS course - One of the following: 3

|           |  |
|-----------|--|
| HEAL 1025 | Culture and Health (DC)                      |
| SOWJ 1001 | Introduction to Social Welfare and Justice   |
| PHYS 1003 | General Physics with Introductory Calculus 1 |
| PSYC 3210 | The Psychology of Prejudice                  |

Engineering Service courses:

|   |  |    |
|---|--|----|
| CEEN 3720   | Decent and Affordable Housing                            | 3  |
| CEEN 4740   | Health, Environment, and Infrastructure in Latin America | 3  |
| International Experience: full-time study abroad (GEEN 9052)                  |  |    |
| International or Domestic Engineering Service project - One of the following: |  | 3  |
| GEEN 4995   | Independent Study in General Engineering                 |    |
| BIEN 4998   | Senior Design Project                                    |    |
| CEEN 4997   | Civil Engineering Capstone Design                        |    |
| COEN 4998   | Senior Design Project                                    |    |
| ELEN 4998   | Senior Design Project                                    |    |
| MEEN 4998   | Senior Design Project                                    |    |
| Full-time study abroad placeholder course (GEEN 9052)                         |  |    |
| Engineering Service Seminar:  |  |    |
| GEEN 2960   | Engineering Service Seminar                              | 0  |
| Total Credit Hours  |  | 12 |

Completion of these requirements will result in formal recognition of the Engineering Service Concentration on the student's transcript.

For more information, see the Engineering Service website ([http://www.marquette.edu/engineering/students\\_service.shtml](http://www.marquette.edu/engineering/students_service.shtml)).

## Concentration in Global Engineering

The profession of engineering is becoming increasingly global, including geographically distributed design teams, multinational companies and operations, global customer bases and markets, regional and international standards, culturally influenced approaches to research and development and a world-view of the environment. As a result, there is a need for students to develop a global perspective of their technical field and profession.

The goal of this program is to provide an integrated opportunity for students to experience engineering from a global perspective throughout their studies and provide formal recognition of these accomplishments via the completion of a concentration as noted on their transcript.

All engineering undergraduates in good standing are eligible to participate in this program. Students who wish to pursue this concentration should work closely with their academic adviser beginning in their freshman year to effectively integrate their interests and these experiences with their engineering degree requirements.

This concentration requires completion of a minimum of 13 credits including:

|  |                         |   |
|--|-------------------------|---|
| Culture/Foreign language - One of the following: |                         | 3 |
| HIST 1301  | Survey of Latin America |   |
| HIST 1401  | Africa                  |   |
| SPAN 3002  | Spoken Spanish          |   |

## Study Abroad Experience:

|           |   |   |
|-----------|---|---|
| ARSC 1005 | Cross-Cultural Issues in Study Abroad                                 | 1 |
| ARSC 3005 | Bridging the Local and Global: Unpacking your Study Abroad Experience | 2 |

Full-time Study abroad placeholder course (GEEN 9052)

International Engineering Project 6

|           |  |
|-----------|--|
| GEEN 4995 | Independent Study in General Engineering |
|-----------|--|

And one of the following:

|           |                       |
|-----------|-----------------------|
| BIEN 4998 | Senior Design Project |
|-----------|-----------------------|

|           |                                   |
|-----------|-----------------------------------|
| CEEN 4997 | Civil Engineering Capstone Design |
|-----------|-----------------------------------|

|           |                       |
|-----------|-----------------------|
| COEN 4998 | Senior Design Project |
|-----------|-----------------------|

|           |                       |
|-----------|-----------------------|
| ELEN 4998 | Senior Design Project |
|-----------|-----------------------|

|           |                       |
|-----------|-----------------------|
| MEEN 4998 | Senior Design Project |
|-----------|-----------------------|

|   |     |
|---|-----|
| International engineering co-op /internship experience or international engineering service or research project - One of the following: | 1-3 |
|---|-----|

|           |                     |
|-----------|---------------------|
| BIEN 4993 | Co-op Work Period 4 |
|-----------|---------------------|

|           |                     |
|-----------|---------------------|
| CEEN 4993 | Co-op Work Period 4 |
|-----------|---------------------|

|           |                     |
|-----------|---------------------|
| COEN 4993 | Co-Op Work Period 4 |
|-----------|---------------------|

|           |                     |
|-----------|---------------------|
| ELEN 4993 | Co-op Work Period 4 |
|-----------|---------------------|

|           |                     |
|-----------|---------------------|
| MEEN 4993 | Co-op Work Period 4 |
|-----------|---------------------|

and the corresponding grading course:

|           |                        |
|-----------|------------------------|
| BIEN 4994 | Co-op Grading Period 4 |
|-----------|------------------------|

|           |                        |
|-----------|------------------------|
| CEEN 4994 | Co-op Grading Period 4 |
|-----------|------------------------|

|           |                        |
|-----------|------------------------|
| COEN 4994 | Co-Op Grading Period 4 |
|-----------|------------------------|

|           |                        |
|-----------|------------------------|
| ELEN 4994 | Co-op Grading Period 4 |
|-----------|------------------------|

|           |                        |
|-----------|------------------------|
| MEEN 4994 | Co-op Grading Period 4 |
|-----------|------------------------|

or

|           |  |
|-----------|--|
| GEEN 4995 | Independent Study in General Engineering |
|-----------|--|

|                    |       |
|--------------------|-------|
| Total Credit Hours | 13-15 |
|--------------------|-------|

For more information, see the Global Engineering website ([http://www.marquette.edu/engineering/students\\_global.shtml](http://www.marquette.edu/engineering/students_global.shtml)).

## Study Abroad Programs

Engineering students may study abroad with a Marquette-affiliated program, a Marquette-exchange program, a Marquette summer or intersession program or a non-Marquette program. Students are urged to contact the office of the assistant dean for academic affairs as early as possible for details. See also, this bulletin under Study Abroad Programs. The Office of International Education Study Abroad Resource Center is located in the Alumni Memorial Union, 425. For additional information, see the Study Abroad website (<http://www.marquette.edu/abroad/>). Also see Concentration in Global Engineering in this section of this bulletin.

## Five-year Combined B.S./M.S. Programs

Each of the departments in the College of Engineering at Marquette University offers programs, which allow highly qualified students to complete a bachelor of science and master of science degree in five calendar years (six years for students enrolled in the Cooperative Education Program). By increasing course loads slightly in the junior year and/or by taking courses in the summer of the junior and/or senior years, qualified students may be able to complete the B.S. degree on schedule in four years and the M.S. degree at the end of five calendar years.

Students intending to pursue one of these programs should begin planning at the end of the sophomore year. Formal application to the program takes place during the second term of the junior year. See individual departments for details.

## Student Organizations

### College Organizations

Engineering students are eligible for membership in the Engineering Student Council, composed of the elected officers of the Engineering Association and one member of the governing board of each activity, fraternal, honorary and professional organization within the College of Engineering.

### Honor Societies

Engineering students are eligible for membership in the following engineering honor societies: Tau Beta Pi, all-engineering; Chi Epsilon, civil engineering; Eta Kappa Nu, electrical engineering; Pi Tau Sigma, mechanical engineering; Alpha Eta Mu Beta, biomedical engineering; and Upsilon Pi Epsilon, computer engineering. Each year, these societies award membership keys to men and women exhibiting high promise of success.

### Professional Fraternities/Sororities

Students in the College of Engineering are eligible to join the following professional fraternities on campus: Sigma Phi Delta, international professional engineering fraternity; Triangle, national fraternity for engineers, architects, and scientists; Alpha Omega Epsilon, professional engineering sorority; and Engineering Knights of St. Patrick.

### Professional Societies

Student chapters have been established by the American Society of Civil Engineers, Builders Coalition of MU: Student Chapter of Associated General Contractors of America, the Institute of Electrical and Electronics Engineers, the American Society of Mechanical Engineers, Association of Computing Machinery, the Society of Automotive Engineers, National Society of Black Engineers, Engineers Without Borders, the Society of Hispanic Professional Engineers, the Society of Women Engineers, the Institute of Transportation Engineers, American Society for Quality Control, the Biomedical Engineering Society, the Solar Energy Society and the Society of Manufacturing Engineers.



# Department of Biomedical Engineering

**Department Chair: Kristina M. Ropella, Ph.D.**

Department of Biomedical Engineering website (<http://www.marquette.edu/engineering/biomedical/>)

The Department of Biomedical Engineering offers curriculum that leads to a bachelor of science degree in biomedical engineering.

## Mission

The Department of Biomedical Engineering is a dedicated team committed to the Jesuit tradition of the pursuit of truth. We develop leaders and problem solvers skilled at applying engineering, science and design principles to improve health in the service of humanity by:

- Discovering and disseminating new knowledge.
- Guiding students to meaningful and ethical professional and personal lives.
- Fostering interdisciplinary and collaborative research and education through academic and industrial alliances.
- Continuing innovative leadership in education, research and industrial relationships.
- Inspiring faculty and students to serve others.

Studies in biomedical engineering incorporate courses in biology, chemistry, mathematics, computing and engineering. These courses, in combination, emphasize the interdisciplinary elements of biomedical engineering not presently offered in the more traditional departments of engineering. A solid foundation in the mathematical, physical and life sciences is necessary for the engineer to function effectively in a medically or biologically oriented problem solving environment. In this environment, the engineer needs to be able to communicate with physicians, to describe and model complex biological systems, to collect and analyze experimental or clinical data, to understand the capabilities and limitations of sophisticated instrumentation and to understand the principles of design.

There are three majors in the biomedical engineering curriculum: biocomputing, bioelectronics and biomechanics. The bioelectronics major includes rigorous training in electrical engineering within the interdisciplinary framework of the curriculum. Such training, which includes courses in electric circuits and analog and digital electronics, supports interests focused on the measurement of bioelectric signals and biomedical instrumentation design. In the senior year, the culmination of the training features intensive biomedical instrument design and computer laboratories emphasizing modern bioelectric applications. In addition, a senior year capstone design course sequence places the student in a multidisciplinary design team situation to solve an actual industrial bioelectronic design problem.

The biomechanics major includes rigorous training in mechanical engineering within the interdisciplinary framework of the curriculum. Such training, which includes courses in materials and solid mechanics, supports interests focused on the application of biomechanics and biomaterials. In the senior year, the culmination of the training features intensive biomedical instrument design and computer laboratories emphasizing modern biomechanical applications. In addition, a senior-year capstone design course sequence places the student in a multidisciplinary design team situation to solve an actual industrial biomechanical or biomaterial design problem.

The biocomputer engineering curriculum integrates computer engineering and the life sciences, with a solid foundation in mathematics, physics, chemistry and engineering methods. The new curriculum combines foundational computer engineering knowledge with biocomputer engineering applications, integrating biology, physiology, medicine, biomedical software design, biosignal processing, bioinstrumentation. In the senior year, the training culminates with a comprehensive, biocomputer engineering, design laboratory experience that incorporates engineers from industry and emphasizes medical device design and methods for biomedical informatics. In addition, a senior

capstone design course places students in a multidisciplinary team working with industry to solve biocomputer design problems.

All majors in biomedical engineering have been designed to be compatible with other programs offered by the College of Engineering. Each major fulfills the requirements of the University Core of Common Studies. The biomechanical and bioelectronics majors require 134 credits for graduation. The biocomputing major requires 135 credits for graduation. Students can earn an optional minor in either electrical or mechanical engineering as well as biology, chemistry, business administration or others. In addition, the majors retain many of the core courses of the initial two years and allow the student to elect the co-op/internship program. Since the majors satisfy the entrance requirements of many professional schools, the student can, usually without additional preparation, pursue studies in medical school, dental school, schools of veterinary medicine, law school and graduate schools in biomedical engineering or traditional areas of engineering.

The Department of Biomedical Engineering operates biomedical image and signal processing laboratories, biocomputer, bioelectronic and biomechanical design laboratories, and students have access to computer, electrical and mechanical engineering laboratories as well as the college and university computer facilities. In addition, collaborative programs exist between Marquette University, the Medical College of Wisconsin, the Milwaukee County Medical Complex, Froedtert Memorial Lutheran Hospital, and the Zablocki Veterans Administration Medical Center. These proximate collaborative research programs, some active for three decades, provide a uniquely enhanced laboratory experience that has significantly contributed to the success of biomedical engineering at Marquette.

## Educational Objectives

To provide an educational program that will prepare graduates to:

- Participate as a technical contributor and member of a design and/or development team.
- Communicate effectively with individuals and teams with a wide variety of backgrounds.
- Pursue professional or graduate degrees or employment in the biomedical industry.
- Understand the legal, ethical, economic and regulatory requirements of medical device design and biomedical engineering research.
- Define, solve and implement solutions to a problem.
- Progress in developing leadership skills.
- Identify limitations in their own knowledge base and skills and engage in lifelong learning.

## Biocomputing Major

| Freshman                 |       |                        |       |
|--------------------------|-------|------------------------|-------|
| First Term               | Hours | Second Term            | Hours |
| BIEN 1100                | 2     | BIEN 1110              | 2     |
| BIOL 1001 <sup>b</sup>   | 3     | BIOL 1002              | 3     |
| MATH 1450 <sup>2,b</sup> | 4     | MATH 1455              | 4     |
| PHYS 1003 <sup>b</sup>   | 4     | PHYS 1004 <sup>b</sup> | 4     |

|                              |              |                              |              |
|------------------------------|--------------|------------------------------|--------------|
| Core Rhetoric 1 <sup>f</sup> | 3            | EECE 1610                    | 3            |
|                              | 16           |                              | 16           |
| <b>Sophomore</b>             |              |                              |              |
| <b>First Term</b>            | <b>Hours</b> | <b>Second Term</b>           | <b>Hours</b> |
| EECE 2710                    | 3            | COEN 2610                    | 3            |
| MATH 2455                    | 3            | BIEN 2300                    | 4            |
| GEEN 2952                    | 1            | CHEM 1002 <sup>b</sup>       | 4            |
| CHEM 1001 <sup>b</sup>       | 4            | EECE 2030                    | 3            |
| BIEN 1120                    | 2            | Core Rhetoric 2 <sup>f</sup> | 3            |
| BIEN 2100                    | 1            |                              |              |
| Core elective <sup>e</sup>   | 3            |                              |              |
|                              | 17           |                              | 17           |
| <b>Junior</b>                |              |                              |              |
| <b>First Term</b>            | <b>Hours</b> | <b>Second Term</b>           | <b>Hours</b> |
| BIOL 2001                    | 3            | COEN 4710                    | 3            |
| BIEN 3300                    | 3            | COEN 4820                    | 3            |
| BIEN 4700                    | 3            | BIEN 4220                    | 3            |
| COSC 2010                    | 3            | BIEN 3200                    | 3            |
| THEO 1001 <sup>b</sup>       | 3            | Core elective <sup>c</sup>   | 3            |
| Core Elective <sup>c</sup>   | 3            |                              |              |
|                              | 18           |                              | 15           |
| <b>Senior</b>                |              |                              |              |
| <b>First Term</b>            | <b>Hours</b> | <b>Second Term</b>           | <b>Hours</b> |
| BIEN 4920                    | 3            | BIEN 4998                    | 3            |
| BIEN 3310                    | 3            | BIEN 4320                    | 3            |
| BIEN 4280                    | 3            | BIEN 4290                    | 3            |
| PHIL 1001 <sup>b</sup>       | 3            | BIEN Elective <sup>1</sup>   | 3            |
| BIEN Elective <sup>1</sup>   | 3            | PHIL 2310 <sup>b</sup>       | 3            |

|                            |    |    |
|----------------------------|----|----|
| THEO Elective <sup>e</sup> | 3  |    |
|                            | 18 | 15 |
| Total credit hours: 132    |    |    |

For footnotes b, c, d, e, f refer to the College of Engineering section of this bulletin for details related to these footnotes.

**1. Biomedical Engineering Electives** - The following is a list of electives typically taken by biomedical engineering students. **This list is not inclusive.** Other possible electives include upper- division courses in MATH, BIOL, PHYS, CHEM, EECE, MEEN, COEN and related subject areas. These courses can be taken if approved by the adviser, department chair and associate dean through a course substitution form. Medical school bound students are strongly encouraged to take CHEM 2111 Organic Chemistry 1 and CHEM 2112 Organic Chemistry 2 as BIEN electives.

|           |   |     |
|-----------|---|-----|
| BIEN 4230 | Intelligent Biosystems  | 3   |
| BIEN 4400 | Transport Phenomena   | 3   |
| BIEN 4410 | Applied Finite Element Analysis   | 3   |
| BIEN 4420 | Introduction to Biomaterials Science and Engineering                        | 3   |
| BIEN 4500 | Medical Imaging Physics   | 3   |
| BIEN 4510 | Image Processing for the Biomedical Sciences                                | 3   |
| BIEN 4600 | Neural Engineering  | 3   |
| BIEN 4610 | Introduction to Rehabilitation Robotics                                     | 3   |
| BIEN 4620 | Rehabilitation Science and Engineering                                      | 3   |
| BIEN 4630 | Rehabilitation Engineering: Prosthetics, Orthotics, Seating and Positioning | 3   |
| BIEN 4640 | Bioengineering of Living Actuators  | 3   |
| BIEN 4710 | Analysis of Physiological Models  | 3   |
| BIEN 4720 | Cardiopulmonary Mechanics   | 3   |
| BIEN 4931 | Topics in Biomedical Engineering  | 1-3 |
| BIEN 4995 | Independent Study in Biomedical Engineering                                 | 1-4 |
| ELEN 3110 | Electromagnetic Fields 1  | 3-4 |
| ELEN 3120 | Electromagnetic Fields 2  | 3   |
| ELEN 3025 | Electrical Instrumentation Laboratory                                       | 2   |
| ELEN 3035 | Analog Electronics Laboratory   | 2   |
| EECE 2710 | Introduction to Computer Hardware and Software                              | 3   |
| COEN 4650 | Introduction to Algorithms  | 3   |
| COEN 4620 | Modern Programming Practices  | 3   |

|           |   |   |
|-----------|---|---|
| COEN 4810 | Database Applications                           | 3 |
| CEEN 2130 | Mechanics of Materials                          | 3 |
| MEEN 3310 | Thermodynamics 1                                | 3 |
| MEEN 3330 | Fundamentals of Heat Transfer                   | 3 |
| MEEN 3250 | Design of Machine Elements 1                    | 4 |
| MEEN 4240 | Polymers and Polymer Composites                 | 3 |
| MEEN 4420 | Failure Analysis                                | 3 |
| BIOL 4101 | Biochemistry and the Molecular Basis of Biology | 3 |
| BIOL 3702 | Experimental Physiology                         | 3 |
| CHEM 2111 | Organic Chemistry 1                             | 4 |
| CHEM 2112 | Organic Chemistry 2                             | 4 |
| MATH 2450 | Calculus 3                                      | 4 |
| MATH 4630 | Mathematical Modeling and Analysis              | 3 |

2. Students who place out of MATH 1450 Calculus 1 through advanced placement are encouraged to take MATH 1451 Calculus 2 and MATH 2450 Calculus 3 in place of MATH 1450 Calculus 1 and MATH 1455 Calculus 2 for Biomedical and Civil Engineers.

**Note:** The three Core electives specified in this program assume that one of these Core electives is a Dual Application core course. If a Dual Application Core elective is not taken, an additional Core elective is required and the total credit hours increases to 135.

## Bioelectronics Major

| Freshman                     |       |                              |       |
|------------------------------|-------|------------------------------|-------|
| First Term                   | Hours | Second Term                  | Hours |
| BIEN 1100                    | 2     | BIEN 1110                    | 2     |
| BIOL 1001 <sup>b</sup>       | 3     | BIOL 1002                    | 3     |
| MATH 1450 <sup>2,b</sup>     | 4     | MATH 1455                    | 4     |
| PHYS 1003 <sup>b</sup>       | 4     | PHYS 1004 <sup>b</sup>       | 4     |
| Core Rhetoric 1 <sup>f</sup> | 3     | Core Rhetoric 2 <sup>f</sup> | 3     |
|                              | 16    |                              | 16    |
| Sophomore                    |       |                              |       |
| First Term                   | Hours | Second Term                  | Hours |
| EECE 2010                    | 3     | ELEN 2020                    | 3     |
| EECE 2015                    | 1     | EECE 2035                    | 1     |

|                            |              |                            |              |
|----------------------------|--------------|----------------------------|--------------|
| BIEN 1120                  | 2            | EECE 2030                  | 3            |
| MATH 2455                  | 3            | ELEN 2040                  | 3            |
| GEEN 2952                  | 1            | BIEN 2100                  | 1            |
| CHEM 1001 <sup>b</sup>     | 4            | CHEM 1002 <sup>b</sup>     | 4            |
| Core elective <sup>c</sup> | 3            | Core elective <sup>c</sup> | 3            |
|                            | 17           |                            | 18           |
| <b>Junior</b>              |              |                            |              |
| <b>First Term</b>          | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |
| EECE 3010                  | 3            | ELEN 3030                  | 3            |
| BIOL 2001                  | 3            | BIEN 3310                  | 3            |
| BIEN 3300                  | 3            | BIEN 3200                  | 3            |
| BIEN 4700                  | 3            | BIEN elective <sup>1</sup> | 3            |
| BIEN elective <sup>1</sup> | 3            | PHIL 1001 <sup>b</sup>     | 3            |
| THEO 1001 <sup>b</sup>     | 3            |                            |              |
|                            | 18           |                            | 15           |
| <b>Senior</b>              |              |                            |              |
| <b>First Term</b>          | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |
| BIEN 4920                  | 3            | BIEN 4998                  | 3            |
| BIEN 4320                  | 3            | BIEN 4400                  | 3            |
| BIEN 4380                  | 3            | BIEN 4390                  | 3            |
| BIEN elective <sup>1</sup> | 3            | EECE 3015                  | 2            |
| THEO elective <sup>e</sup> | 3            | PHIL 2310 <sup>b</sup>     | 3            |
|                            |              | Core elective <sup>c</sup> | 3            |
|                            | 15           |                            | 17           |
| Total credit hours: 132    |              |                            |              |

For footnotes b, c, d, e, f refer to the College of Engineering section of this bulletin for details related to these footnotes.

**1. Biomedical Engineering Electives** - The following is a list of electives typically taken by biomedical engineering students. **This list is not inclusive.** Other possible electives include upper division courses in MATH, BIOL, PHYS, CHEM, EECE, MEEN, COEN and related subject areas. These courses can be taken if approved by the adviser, department chair and associate dean through a course substitution form. Medical school bound students are strongly encouraged to take CHEM 2111 Organic Chemistry 1, CHEM 2112 Organic Chemistry 2 and BIOL 4101 Biochemistry and the Molecular Basis of Biology as electives.

|           |   |     |
|-----------|---|-----|
| BIEN 4220 | Embedded Biomedical Instrumentation   | 3   |
| BIEN 4230 | Intelligent Biosystems  | 3   |
| BIEN 4410 | Applied Finite Element Analysis   | 3   |
| BIEN 4420 | Introduction to Biomaterials Science and Engineering                        | 3   |
| BIEN 4500 | Medical Imaging Physics   | 3   |
| BIEN 4510 | Image Processing for the Biomedical Sciences                                | 3   |
| BIEN 4600 | Neural Engineering  | 3   |
| BIEN 4610 | Introduction to Rehabilitation Robotics                                     | 3   |
| BIEN 4620 | Rehabilitation Science and Engineering                                      | 3   |
| BIEN 4630 | Rehabilitation Engineering: Prosthetics, Orthotics, Seating and Positioning | 3   |
| BIEN 4640 | Bioengineering of Living Actuators  | 3   |
| BIEN 4710 | Analysis of Physiological Models  | 3   |
| BIEN 4720 | Cardiopulmonary Mechanics   | 3   |
| BIEN 4931 | Topics in Biomedical Engineering  | 1-3 |
| BIEN 4995 | Independent Study in Biomedical Engineering                                 | 1-4 |
| COEN 4620 | Modern Programming Practices  | 3   |
| COEN 4650 | Introduction to Algorithms  | 3   |
| COEN 4810 | Database Applications   | 3   |
| ELEN 3110 | Electromagnetic Fields 1  | 3-4 |
| ELEN 3120 | Electromagnetic Fields 2  | 3   |
| ELEN 3025 | Electrical Instrumentation Laboratory                                       | 2   |
| ELEN 3035 | Analog Electronics Laboratory   | 2   |
| EECE 2710 | Introduction to Computer Hardware and Software                              | 3   |
| CEEN 2130 | Mechanics of Materials  | 3   |
| MEEN 3310 | Thermodynamics 1  | 3   |
| MEEN 3330 | Fundamentals of Heat Transfer   | 3   |
| MEEN 3250 | Design of Machine Elements 1  | 4   |
| MEEN 4240 | Polymers and Polymer Composites   | 3   |
| MEEN 4420 | Failure Analysis  | 3   |
| BIOL 3702 | Experimental Physiology   | 3   |
| BIOL 4101 | Biochemistry and the Molecular Basis of Biology                             | 3   |

|           |                                    |   |
|-----------|------------------------------------|---|
| CHEM 2111 | Organic Chemistry 1                | 4 |
| CHEM 2112 | Organic Chemistry 2                | 4 |
| MATH 2450 | Calculus 3                         | 4 |
| MATH 4630 | Mathematical Modeling and Analysis | 3 |

2. Students who place out of MATH 1450 Calculus 1 through advanced placement are encouraged to take MATH 1451 Calculus 2 and MATH 2450 Calculus 3 in place of MATH 1450 Calculus 1 and MATH 1455 Calculus 2 for Biomedical and Civil Engineers. MATH 2450 Calculus 3 will count as a BIEN elective.

**Note:** The three Core electives specified in this program assume that one of these Core electives is a Dual Application core course. If a Dual Application Core elective is not taken, an additional Core elective is required and the total credit hours increases to 135.

## Biomechanics Major

| Freshman                     |       |                              |       |
|------------------------------|-------|------------------------------|-------|
| First Term                   | Hours | Second Term                  | Hours |
| BIEN 1100                    | 2     | BIEN 1110                    | 2     |
| BIOL 1001 <sup>b</sup>       | 3     | BIOL 1002                    | 3     |
| MATH 1450 <sup>2,b</sup>     | 4     | MATH 1455                    | 4     |
| PHYS 1003 <sup>b</sup>       | 4     | PHYS 1004 <sup>b</sup>       | 4     |
| Core Rhetoric 1 <sup>f</sup> | 3     | Core Rhetoric 2 <sup>f</sup> | 3     |
|                              | 16    |                              | 16    |
| Sophomore                    |       |                              |       |
| First Term                   | Hours | Second Term                  | Hours |
| BIOL 2001                    | 3     | MEEN 2460                    | 3     |
| CHEM 1001 <sup>b</sup>       | 4     | CHEM 1002 <sup>b</sup>       | 4     |
| CEEN 2110                    | 3     | MEEN 2120                    | 3     |
| MATH 2455                    | 3     | BIEN 2100                    | 1     |
| GEEN 2952                    | 1     | BIEN 2300                    | 4     |
| BIEN 1120                    | 2     | Core elective <sup>c</sup>   | 3     |
|                              | 16    |                              | 18    |
| Junior                       |       |                              |       |
| First Term                   | Hours | Second Term                  | Hours |
| BIEN 3300                    | 3     | BIEN 3310                    | 3     |



|                            |              |                            |              |
|----------------------------|--------------|----------------------------|--------------|
| CEEN 2130                  | 3            | BIEN 4700                  | 3            |
| MEEN 3310                  | 3            | BIEN 3200                  | 3            |
| MEEN elective <sup>3</sup> | 3            | BIEN elective <sup>1</sup> | 3            |
| THEO 1001 <sup>b</sup>     | 3            | Core elective <sup>c</sup> | 3            |
| Core elective <sup>c</sup> | 3            |                            |              |
|                            | 18           |                            | 15           |
| <b>Senior</b>              |              |                            |              |
| <b>First Term</b>          | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |
| BIEN 4920                  | 3            | BIEN 4998                  | 3            |
| BIEN 4320                  | 3            | BIEN 4400                  | 3            |
| BIEN 4480                  | 3            | BIEN 4490                  | 3            |
| BIEN elective <sup>1</sup> | 3            | BIEN elective <sup>1</sup> | 3            |
| THEO Elective <sup>e</sup> | 3            | PHIL 2310 <sup>b</sup>     | 3            |
| PHIL 1001 <sup>b</sup>     | 3            |                            |              |
|                            | 18           |                            | 15           |
| Total credit hours: 132    |              |                            |              |

For footnotes b, c, d, e, f refer to the College of Engineering section of this bulletin for details related to these footnotes.

**1. Biomedical Engineering Electives** - The following is a list of electives typically taken by biomedical engineering students. **This list is not inclusive.** Other possible electives include upper- division courses in MATH, BIOL, PHYS, CHEM, EECE, MEEN, COEN and related subject areas. These courses can be taken if approved by the adviser, department chair and associate dean through a course substitution form. Medical school bound students are strongly encouraged to take CHEM 2111 Organic Chemistry 1, CHEM 2112 Organic Chemistry 2 and BIOL 4101 Biochemistry and the Molecular Basis of Biology as electives.

|           |  |   |
|-----------|--|---|
| BIEN 4220 | Embedded Biomedical Instrumentation                  | 3 |
| BIEN 4230 | Intelligent Biosystems                               | 3 |
| BIEN 4410 | Applied Finite Element Analysis                      | 3 |
| BIEN 4420 | Introduction to Biomaterials Science and Engineering | 3 |
| BIEN 4500 | Medical Imaging Physics                              | 3 |
| BIEN 4510 | Image Processing for the Biomedical Sciences         | 3 |
| BIEN 4600 | Neural Engineering                                   | 3 |
| BIEN 4610 | Introduction to Rehabilitation Robotics              | 3 |
| BIEN 4620 | Rehabilitation Science and Engineering               | 3 |

|           |   |     |
|-----------|---|-----|
| BIEN 4630 | Rehabilitation Engineering: Prosthetics, Orthotics, Seating and Positioning | 3   |
| BIEN 4640 | Bioengineering of Living Actuators  | 3   |
| BIEN 4710 | Analysis of Physiological Models  | 3   |
| BIEN 4720 | Cardiopulmonary Mechanics   | 3   |
| BIEN 4931 | Topics in Biomedical Engineering  | 1-3 |
| BIEN 4995 | Independent Study in Biomedical Engineering                                 | 1-4 |
| MEEN 3330 | Fundamentals of Heat Transfer   | 3   |
| MEEN 3250 | Design of Machine Elements 1  | 4   |
| MEEN 4240 | Polymers and Polymer Composites   | 3   |
| MEEN 4420 | Failure Analysis  | 3   |
| COEN 4620 | Modern Programming Practices  | 3   |
| COEN 4650 | Introduction to Algorithms  | 3   |
| COEN 4810 | Database Applications   | 3   |
| ELEN 3110 | Electromagnetic Fields 1  | 3-4 |
| ELEN 3120 | Electromagnetic Fields 2  | 3   |
| ELEN 3025 | Electrical Instrumentation Laboratory                                       | 2   |
| ELEN 3035 | Analog Electronics Laboratory   | 2   |
| EECE 2710 | Introduction to Computer Hardware and Software                              | 3   |
| BIOL 3702 | Experimental Physiology   | 3   |
| BIOL 4101 | Biochemistry and the Molecular Basis of Biology                             | 3   |
| CHEM 2111 | Organic Chemistry 1   | 4   |
| CHEM 2112 | Organic Chemistry 2   | 4   |
| MATH 2450 | Calculus 3  | 4   |
| MATH 4630 | Mathematical Modeling and Analysis  | 3   |

2. Students who place out of MATH 1450 Calculus 1 through advanced placement are encouraged to take MATH 1451 Calculus 2 and MATH 2450 Calculus 3 in place of MATH 1450 Calculus 1 and MATH 1455 Calculus 2 for Biomedical and Civil Engineers.

3. **Mechanical Engineering Electives** - Students may choose from the following list of courses. If not used as an Mechanical Engineering elective, any of these courses may be used as a Biomedical Engineering Elective.

|           |                                |   |
|-----------|--------------------------------|---|
| MEEN 3220 | Dynamics of Mechanical Systems | 3 |
| MEEN 3250 | Design of Machine Elements 1   | 4 |

|           |  |   |
|-----------|--|---|
| MEEN 3260 | Numerical Methods of Mechanical Systems        | 3 |
| MEEN 3460 | Materials Selection in Mechanical Design       | 3 |
| MEEN 4220 | Intermediate Dynamics                          | 3 |
| MEEN 4230 | Intermediate Mechanics of Materials            | 3 |
| MEEN 4240 | Polymers and Polymer Composites                | 3 |
| MEEN 4330 | Optics, Lasers and Spectroscopy in Engineering | 3 |

**Note:** The three Core electives specified in this program assume that one of these Core electives is a Dual Application core course. If a Dual Application Core elective is not taken, an additional Core elective is required and the total credit hours increases to 135.

## Biomedical Engineering Minor

The Department of Biomedical Engineering offers a minor in biomedical engineering to all undergraduate students in the university except those students in biomedical engineering. Completion of the minor will be noted on the student's transcript if the following requirements are met: Twenty-three hours consisting of:

|                    |   |    |
|--------------------|---|----|
| BIEN 2300          | Biomedical Circuits and Electronics             | 4  |
| BIEN 3200          | Computer Applications in Biomedical Engineering | 3  |
| BIEN 3300          | Signals and Systems for Biomedical Engineering  | 3  |
| BIEN 4320          | Biomedical Instrumentation Design               | 3  |
| BIEN 4700          | Systems Physiology                              | 3  |
| CHEM 2111          | Organic Chemistry 1                             | 4  |
| BIOL 1001          | General Biology 1                               | 3  |
| or equivalent      |   |    |
| Total Credit Hours |   | 23 |

At least half of these credit hours must be taken at Marquette University.

## Other Minors

Biomedical engineering students can earn minors in a wide variety of areas including computer engineering, electrical engineering, mechanical engineering, biology and chemistry. Interested students should consult with their academic adviser and refer to the appropriate section of the Undergraduate Bulletin for specific minor requirements. Students wishing to achieve a minor in a non-engineering minor should follow the guidelines listed in the Non-Engineering Minors (p. 677) section of the College of Engineering bulletin.

## The Les Aspin Biomedical Internships

The Department of Biomedical Engineering in conjunction with the Les Aspin Center for Government at Marquette University offers internships in medical regulatory and public policy issues. The Les

Aspin Biomedical Engineering Internships began in Spring 1997 with qualified biomedical engineering undergraduates traveling to Washington, D.C. The venue for the engineering internships is Capitol Hill, the Food and Drug Administration or private industry located in the Washington, D.C., area. In addition to participating in the internship experience, the students take Marquette University classes at the Les Aspin Center for Government, located a few blocks from Capitol Hill, and reside nearby in Marquette-owned, furnished apartments. This program is unique in providing undergraduate experience in research and regulatory issues.

## **Biomedical Engineering Cooperative Education and Internship Program**

The Biomedical Engineering Co-op/Internship program offers students the opportunity to gain meaningful practical and professional experiences in the health care industrial environment, in addition to their on-campus educational experiences. The undergraduate biomedical program also provides real-world biomedical engineering experiences in the freshman biomedical engineering methods course and Career Development Workshops during the sophomore year. Currently more than 70 percent of the biomedical engineering students participate in co-op or internship opportunities.

Marquette University began its Engineering Co-op Program in 1919. Students usually enter the Co-op program at the end of their sophomore year and complete three to four terms of off-campus employment. The employment experience is alternated with terms of on-campus study, only extending graduation by one year. The College of Engineering is a member of the American Society for Engineering Education and all of its biomedical, civil, computer, electrical and mechanical undergraduate degree programs are accredited by the Engineering Accreditation Commission of the Accreditation Board of ABET; 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone: (410) 347-7700. In addition to the formal Co-op program, undergraduates may also gain experience through summer internships.

## **Five Year B.S./M.S. Program**

This program allows students to receive a bachelor of science degree and a master of science degree in biomedical engineering in five years. Students with grade point averages (3.500 or above) apply to the program during their junior year. They begin their thesis research the summer between their junior and senior years. Their research laboratory experience continues the summer between their senior and fifth years and throughout their fifth year, culminating in the preparation of a written thesis and defense.

# Department of Civil, Construction and Environmental Engineering

**Chairperson: Christopher M. Foley, Ph.D., P.E.**

Department of Civil, Construction and Environmental Engineering website ([http://www.marquette.edu/engineering/civil\\_environmental/](http://www.marquette.edu/engineering/civil_environmental/))

The Department of Civil, Construction and Environmental Engineering offers a curriculum that leads to a bachelor of science degree in civil engineering or a bachelor of science degree in construction engineering and management. Students that pursue a bachelor of science degree in civil engineering may select from the civil engineering or environmental engineering majors. Students who pursue a bachelor of science degree in construction engineering and management will select the construction engineering and management major.

## Mission

The mission of the Department of Civil, Construction and Environmental Engineering is to educate students in the Catholic, Jesuit tradition. These students will be competent in their technical fields, appreciate the moral and ethical impact of their professional work and continue their professional development throughout their careers. The students and faculty of the department will advance the state of technical and scientific knowledge through research and provide service to civic and professional communities.

## Program Educational Objectives

To carry out the mission of the College of Engineering and the mission of the department described previously, the Department of Civil, Construction and Environmental Engineering has established the following Educational Objectives for its undergraduate programs.

- Develop an appreciation for religious, moral, ethical and human values.
- Provide a foundation for the application of the fundamentals of science and mathematics to engineering analysis and design.
- Provide a foundation for understanding the application of civil engineering by giving students an opportunity to experience the civil engineering profession through the co-operative engineering program, service learning, summer internships and/or hands-on experience in laboratory courses.
- Prepare graduates to communicate effectively in written, graphical and oral form.
- Prepare students to be leaders by providing opportunities to exhibit leadership and develop team-building skills.
- Instill a commitment to lifelong learning.

Civil engineering is the art and science used in the construction of facilities which people need in their environment — land, water and air. Airports, buildings, bridges, dams, harbors, highways, irrigation systems, transportation systems, sewerage and water supply systems are examples of the types of facilities which are the responsibility of the civil engineer.

Since the beginning of civilization, people have been building with the use of engineering principles. Modern society depends on this contribution from the civil engineer, whose education is systematically developed from a strong background in mathematics and the physical and engineering sciences. The

civil engineer must relate to society and fellow men and women and be aware of how the engineering principles can be applied for the benefit of others.

Civil engineers are also stewards of the land, its resources and environment. Many civil engineers are involved in activities such as watershed and environmental planning, sustainable resource development and environmental protection.

The civil engineering major develops the analysis and design capabilities of the student in the study of structures and systems. The application of computers and pertinent software is used throughout the major. A broad educational program can be selected or some specialization is possible through advised elective course selection.

The environmental engineering major provides the student with a fundamental background in civil engineering and specialization in the field of environmental engineering.

The construction engineering and management major provides the student with general engineering skills and the management and finance background for entry into the field of construction engineering.

The curriculum provides the graduate with the necessary training to begin a professional career without further formal education, while also affording those students who enter graduate studies the opportunity to prepare more adequately in their field of specialization.

## Areas of Study

Civil engineering majors have the option to concentrate their studies in the following areas:

### General Civil Engineering

The diverse needs of people and society for many types of constructed facilities give a broad range to civil engineering. This breadth is well-suited to allow specialization in one of the major divisions of this branch of engineering. However, it is not necessary to make a commitment to only one area of concentration while in the undergraduate college. The curriculum at Marquette permits students to prepare themselves in civil engineering by completing the core courses which provide all of the necessary fundamentals and to select electives to acquire additional depth in one or more of the areas of specialization. All of the electives which the department offers are open to students with the required prerequisites. Selection of the courses for a general program requires careful planning between the student and an academic adviser.

### Construction Management

Construction projects of all types require management as well as the traditional engineering skills. This program is arranged so that a student may vary the usual undergraduate program to obtain the knowledge needed to enter a graduate program in construction management while still maintaining the essentials of a general civil engineering program.

Those students who want to focus more on construction engineering may be interested in pursuing a bachelor of science degree in construction engineering and management which is also offered by the department.

Students interested in the Construction Management option may select courses from the following list as their CEEN Technical electives:

|           |  |   |
|-----------|--|---|
| CEEN 4230 | Urban Hydrology and Stormwater Management (Design)           | 3 |
| CEEN 4320 | Engineering Decisions Under Uncertainty (Highly Recommended) | 3 |
| CEEN 4340 | Urban Planning for Civil Engineers (Design)                  | 3 |

|           |  |   |
|-----------|--|---|
| CEEN 4350 | Law for Engineers  | 3 |
| CEEN 4411 | Matrix Structural Analysis   | 3 |
| CEEN 4441 | Advanced Concrete and Masonry Design (Design)                                | 3 |
| CEEN 4442 | Prestressed Concrete Design (Design)   | 3 |
| CEEN 4460 | Foundation Engineering (Design - Highly Recommended)                         | 3 |
| CEEN 4650 | Pavement Design (Design)   | 3 |
| CEEN 4660 | Pavement Management  | 3 |
| CEEN 4715 | Sustainable Engineering (Design)   | 3 |
| CEMA 3850 | Construction Equipment and Methods (Design - Highly Recommended)             | 3 |
| CEMA 4815 | Mechanical and Electrical Systems for Buildings (Highly Recommended)         | 3 |
| CEMA 4820 | Construction Operations and Productivity                                     | 3 |
| CEMA 4825 | E-Business in the Construction Industry                                      | 3 |
| CEMA 4830 | Construction Planning, Scheduling, and Control (Design - Highly Recommended) | 3 |
| CEMA 4840 | Construction Cost Analysis and Estimating (Highly Recommended)               | 3 |

## Environmental and Water Resources

The environmental area deals with the control and improvement of human surroundings using principles developed in civil engineering. The environmental/water resources engineer is responsible for conceiving and designing systems for water supply, waste water treatment and disposal, air pollution control, solid and hazardous waste management and design of water resources systems.

Students interested in the Environmental and Water Resources option may select courses from the following list as their Environmental Engineering Technical electives:

|           |   |   |
|-----------|---|---|
| CEEN 3220 | River Engineering (Design - Highly Recommended)                         | 3 |
| CEEN 4230 | Urban Hydrology and Stormwater Management (Design - Highly Recommended) | 3 |
| CEEN 4240 | Water Resources Engineering (Design)                                    | 3 |
| CEEN 4250 | Groundwater Engineering   | 3 |
| CEEN 4310 | Geographical Information Systems in Engineering and Planning            | 3 |
| CEEN 4320 | Engineering Decisions Under Uncertainty                                 | 3 |
| CEEN 4340 | Urban Planning for Civil Engineers (Design)                             | 3 |
| CEEN 4515 | Environmental Chemistry (Highly Recommended)                            | 3 |
| CEEN 4520 | Industrial Wastewater Management (Design - Highly Recommended)          | 3 |

|           |  |   |
|-----------|--|---|
| CEEN 4525 | Treatment Plant Design and Operation (Design - Highly Recommended) | 3 |
| CEEN 4530 | Hazardous and Industrial Waste Management (Highly Recommended)     | 3 |
| CEEN 4535 | Environmental Engineering Microbiology (Highly Recommended)        | 3 |
| CEEN 4540 | Municipal Solid Waste Management (Highly Recommended)              | 3 |
| CEEN 4545 | Air Pollution Engineering (Highly Recommended)                     | 3 |
| CEEN 4715 | Sustainable Engineering (Design)                                   | 3 |
| CEMA 4840 | Construction Cost Analysis and Estimating                          | 3 |

## Structural

The structural area deals with the planning, analysis, design and construction of various types of structures such as buildings, bridges and foundations. Students will learn to analyze and design structures in steel and concrete. They will also learn to analyze and design foundations for structures.

Students interested in the Structural option may select courses from the following list as their CEEN Technical electives:

|           |  |   |
|-----------|--|---|
| CEEN 4145 | Advanced Strength and Applied Stress Analysis                      | 3 |
| CEEN 4320 | Engineering Decisions Under Uncertainty                            | 3 |
| CEEN 4350 | Law for Engineers  | 3 |
| CEEN 4411 | Matrix Structural Analysis (Highly Recommended)                    | 3 |
| CEEN 4431 | Steel Design 2 (Design - Highly Recommended)                       | 3 |
| CEEN 4441 | Advanced Concrete and Masonry Design (Design - Highly Recommended) | 3 |
| CEEN 4442 | Prestressed Concrete Design (Design - Highly Recommended)          | 3 |
| CEEN 4450 | Bridge Design (Design - Highly Recommended)                        | 3 |
| CEEN 4460 | Foundation Engineering (Design)                                    | 3 |
| CEEN 4715 | Sustainable Engineering (Design)                                   | 3 |
| CEMA 4840 | Construction Cost Analysis and Estimating                          | 3 |

## Transportation

The transportation area provides the student with an overall understanding of the problems of transportation and urban planning, and how to solve them. Students may elect to concentrate in the area of highway engineering (design, pavements and materials) or traffic engineering (design, operations and traffic management).

Students interested in the Transportation option may select courses from the following list as their CEEN Technical electives:



|           |  |   |
|-----------|--|---|
| CEEN 3615 | Highway Planning and Design (Design - Highly Recommended)        | 3 |
| CEEN 3620 | Highway Interchange Design (Design - Highly Recommended)         | 3 |
| CEEN 3625 | Urban Street Design (Highly Recommended)                         | 3 |
| CEEN 3630 | Airport Planning and Design (Design - Highly Recommended)        | 3 |
| CEEN 3640 | Traffic Characteristics and Design (Design - Highly Recommended) | 3 |
| CEEN 3645 | Traffic Engineering (Design - Highly Recommended)                | 3 |
| CEEN 4230 | Urban Hydrology and Stormwater Management (Design)               | 3 |
| CEEN 4240 | Water Resources Engineering (Design)                             | 3 |
| CEEN 4310 | Geographical Information Systems in Engineering and Planning     | 3 |
| CEEN 4340 | Urban Planning for Civil Engineers (Design - Highly Recommended) | 3 |
| CEEN 4350 | Law for Engineers  | 3 |
| CEEN 4450 | Bridge Design (Design)   | 3 |
| CEEN 4545 | Air Pollution Engineering  | 3 |
| CEEN 4650 | Pavement Design (Design - Highly Recommended)                    | 3 |
| CEEN 4660 | Pavement Management (Highly Recommended)                         | 3 |
| CEEN 4670 | Advanced Transportation Materials                                | 3 |
| CEEN 4715 | Sustainable Engineering (Design - Highly Recommended)            | 3 |
| CEMA 4840 | Construction Cost Analysis and Estimating                        | 3 |

## Civil Engineering Major

| Freshman                     |       |                              |       |
|------------------------------|-------|------------------------------|-------|
| First Term                   | Hours | Second Term                  | Hours |
| CHEM 1001 <sup>b</sup>       | 4     | CHEM 1002 <sup>b</sup>       | 4     |
| Core Rhetoric 1 <sup>f</sup> | 3     | Core Rhetoric 2 <sup>f</sup> | 3     |
| GEEN 1200                    | 3     | GEEN 1210                    | 3     |
| MATH 1450 <sup>b</sup>       | 4     | MATH 1455                    | 4     |
| Core elective <sup>c</sup>   | 3     | Core elective <sup>c</sup>   | 3     |
|                              | 17    |                              | 17    |
| Sophomore                    |       |                              |       |
| First Term                   | Hours | Second Term                  | Hours |
| PHYS 1003 <sup>b</sup>       | 4     | PHYS 1004 <sup>b</sup>       | 4     |

|  |              |                                  |              |
|--|--------------|----------------------------------|--------------|
| MATH 2455  | 3            | MATH 4720                        | 3            |
| GEEN 2952  | 1            | CEEN 2120                        | 3            |
| CEEN 2110  | 3            | MEEN 2402                        | 3            |
| CEEN 2310  | 3            | CEEN 3320                        | 3            |
| Core elective <sup>c</sup>                           | 3            |                                  |              |
|  | 17           |                                  | 16           |
| <b>Junior</b>  |              |                                  |              |
| <b>First Term</b>                                    | <b>Hours</b> | <b>Second Term</b>               | <b>Hours</b> |
| CEEN 2130  | 3            | CEEN 3410                        | 3            |
| CEEN 3150  | 3            | CEEN 3210                        | 3            |
| CEEN 3160  | 3            | CEEN 3610                        | 3            |
| CEEN 3510  | 3            | CEMA 3810                        | 3            |
| PHIL 1001 <sup>b</sup>                               | 3            | Science elective <sup>3</sup>    | 3            |
| Cross-disciplinary Engineering elective <sup>2</sup> | 3            |                                  |              |
|  | 18           |                                  | 15           |
| <b>Senior</b>  |              |                                  |              |
| <b>First Term</b>                                    | <b>Hours</b> | <b>Second Term</b>               | <b>Hours</b> |
| CEEN 3430  | 3            | CEEN 4997                        | 4            |
| CEEN 3440  | 3            | CEEN Technical elective          | 3            |
| THEO 1001 <sup>b</sup>                               | 3            | CEEN Technical elective (Design) | 3            |
| CEEN 4710  | 1            | PHIL 2310 <sup>b</sup>           | 3            |
| CEEN Technical elective                              | 3            | Theology elective <sup>e</sup>   | 3            |
| CEEN Technical elective (Design)                     | 3            |                                  |              |
|  | 16           |                                  | 16           |
| Total credit hours: 132                              |              |                                  |              |

- 1 For footnotes b, c, d, e, f refer to the College of Engineering section of the Undergraduate Bulletin for details related to these footnotes.

**Note:** The three core electives<sup>c</sup> specified in this program assume that one of these Core electives is a Dual Application core course. If a Dual Application Core elective is not taken, an additional Core elective is required and the total credit hours increases to 135.

- 2 Either ELEN 3001 Electric Circuits and Machinery or MEEN 3310 Thermodynamics 1.
- 3 A science elective in addition to the CHEM and PHYS courses outlined above in areas such as biology, geology and meteorology must be selected subject to approval by the adviser, department chair and assistant dean.

## Technical Elective Requirements

All civil engineering majors must complete 12 credits of technical electives from the courses listed below. A minimum of 6 credits of civil engineering design is required and must be selected from those courses designated as design (D).

|           |  |   |
|-----------|--|---|
| CEEN 3220 | River Engineering (D)  | 3 |
| CEEN 3615 | Highway Planning and Design (D)                              | 3 |
| CEEN 3620 | Highway Interchange Design (D)                               | 3 |
| CEEN 3625 | Urban Street Design (D)                                      | 3 |
| CEEN 3630 | Airport Planning and Design (D)                              | 3 |
| CEEN 3640 | Traffic Characteristics and Design (D)                       | 3 |
| CEEN 3645 | Traffic Engineering (D)                                      | 3 |
| CEEN 4145 | Advanced Strength and Applied Stress Analysis                | 3 |
| CEEN 4230 | Urban Hydrology and Stormwater Management (D)                | 3 |
| CEEN 4240 | Water Resources Engineering (D)                              | 3 |
| CEEN 4250 | Groundwater Engineering                                      | 3 |
| CEEN 4310 | Geographical Information Systems in Engineering and Planning | 3 |
| CEEN 4320 | Engineering Decisions Under Uncertainty                      | 3 |
| CEEN 4340 | Urban Planning for Civil Engineers (D)                       | 3 |
| CEEN 4350 | Law for Engineers  | 3 |
| CEEN 4411 | Matrix Structural Analysis                                   | 3 |
| CEEN 4431 | Steel Design 2 (D)   | 3 |
| CEEN 4441 | Advanced Concrete and Masonry Design (D)                     | 3 |
| CEEN 4442 | Prestressed Concrete Design (D)                              | 3 |

|           |  |   |
|-----------|--|---|
| CEEN 4450 | Bridge Design (D)                                  | 3 |
| CEEN 4460 | Foundation Engineering (D)                         | 3 |
| CEEN 4515 | Environmental Chemistry                            | 3 |
| CEEN 4520 | Industrial Wastewater Management                   | 3 |
| CEEN 4525 | Treatment Plant Design and Operation (D)           | 3 |
| CEEN 4530 | Hazardous and Industrial Waste Management          | 3 |
| CEEN 4535 | Environmental Engineering Microbiology             | 3 |
| CEEN 4540 | Municipal Solid Waste Management                   | 3 |
| CEEN 4545 | Air Pollution Engineering                          | 3 |
| CEEN 4650 | Pavement Design (D)                                | 3 |
| CEEN 4660 | Pavement Management                                | 3 |
| CEEN 4670 | Advanced Transportation Materials                  | 3 |
| CEEN 4715 | Sustainable Engineering (D)                        | 3 |
| CEMA 3850 | Construction Equipment and Methods (D)             | 3 |
| CEMA 4815 | Mechanical and Electrical Systems for Buildings    | 3 |
| CEMA 4820 | Construction Operations and Productivity           | 3 |
| CEMA 4825 | E-Business in the Construction Industry            | 3 |
| CEMA 4830 | Construction Planning, Scheduling, and Control (D) | 3 |
| CEMA 4840 | Construction Cost Analysis and Estimating          | 3 |

(D) Designates a Civil Engineering design course.

Exceptions to requirements: Students enrolled in NROTC or AROTC may substitute approved naval science or military science courses.

The civil engineering major provides for elective courses which enable a student to study in depth or breadth those areas which best meet individual interests and needs. In this way, any student, after consultation with an adviser and approval by the department chairperson, can follow a special program which fulfills the technical elective credit requirement. The electives listed in the following table are those which would normally be used for this purpose. These are meant to be only suggestions and it is the responsibility of the student and an adviser to develop a well-planned elective program.

## Environmental Engineering Major

In addition to the Civil Engineering major described above, students may elect to specialize in environmental engineering and obtain a major in that discipline. The major in Environmental Engineering provides a solid foundation in civil engineering as well as more comprehensive study in the area related to the environment.

| <b>Freshman</b>                          |              |                                  |              |
|--|--------------|----------------------------------|--------------|
| <b>First Term</b>                        | <b>Hours</b> | <b>Second Term</b>               | <b>Hours</b> |
| CHEM 1001 <sup>b</sup>                   | 4            | CHEM 1002 <sup>b</sup>           | 4            |
| Core Rhetoric 1 <sup>f</sup>             | 3            | Core Rhetoric 2 <sup>f</sup>     | 3            |
| GEEN 1200                                | 3            | GEEN 1210                        | 3            |
| MATH 1450 <sup>b</sup>                   | 4            | MATH 1455                        | 4            |
| Core Elective <sup>c</sup>               | 3            | Core Elective <sup>c</sup>       | 3            |
|  | 17           |                                  | 17           |
| <b>Sophomore</b>                         |              |                                  |              |
| <b>First Term</b>                        | <b>Hours</b> | <b>Second Term</b>               | <b>Hours</b> |
| PHYS 1003 <sup>b</sup>                   | 4            | PHYS 1004 <sup>b</sup>           | 4            |
| MATH 2455                                | 3            | MATH 4720                        | 3            |
| GEEN 2952                                | 1            | CEEN 2120                        | 3            |
| CEEN 2110                                | 3            | MEEN 2402                        | 3            |
| CEEN 2310                                | 3            | CEEN 3320                        | 3            |
| Core Elective <sup>c</sup>               | 3            |                                  |              |
|  | 17           |                                  | 16           |
| <b>Junior</b>                            |              |                                  |              |
| <b>First Term</b>                        | <b>Hours</b> | <b>Second Term</b>               | <b>Hours</b> |
| CEEN 2130                                | 3            | CEEN 3410                        | 3            |
| CEEN 3150                                | 3            | CEEN 3210                        | 3            |
| CEEN 3160                                | 3            | PHIL 1001                        | 3            |
| CEEN 3510                                | 3            | CEEN 3610                        | 3            |
| Biological Science Elective <sup>3</sup> | 3            | CEMA 3810                        | 3            |
| MEEN 3310                                | 3            |                                  |              |
|  | 18           |                                  | 15           |
| <b>Senior</b>                            |              |                                  |              |
| <b>First Term</b>                        | <b>Hours</b> | <b>Second Term</b>               | <b>Hours</b> |
| Structural Design Elective <sup>4</sup>  | 3            | CEEN 4997                        | 4            |
| CEEN 4515                                | 3            | Environmental Technical Elective | 3            |

|   |    |   |    |
|---|----|---|----|
| PHIL 2310 <sup>b</sup>                    | 3  | Environmental Technical Elective (Design) | 3  |
| CEEN 4953 <sup>2</sup>                    | 0  | Environmental Technical Elective          | 3  |
| CEEN 4710                                 | 1  | Theology Elective <sup>e</sup>            | 3  |
| Environmental Technical Elective (Design) | 3  |   |    |
| THEO 1001 <sup>b</sup>                    | 3  |   |    |
|   | 16 |   | 16 |
| Total credit hours: 132                   |    |   |    |

- 1 For footnotes b, c, d, e, f refer to the College of Engineering section of this bulletin for details related to these footnotes.

**Note:** The three Core electives<sup>c</sup> in this program assume that one Core elective is a Dual application course. If a Dual Application Core elective is not taken, an additional Core elective is required and the total credit hours increases to 135.

- 2 Participation in CEEN 4953 Environmental Seminar is required during either the first or second term of the senior year.
- 3 Either BIOL 1001 General Biology 1, BIOL 2401 Ecology or CEEN 4535 Environmental Engineering Microbiology.
- 4 Either CEEN 3430 Steel Design 1 or CEEN 3440 Reinforced Concrete Design.

## Environmental Electives

Twelve credits are required from the following list. Six credits must be selected from those designated as design (D).

|           |  |   |
|-----------|--|---|
| CEEN 3220 | River Engineering (D)  | 3 |
| CEEN 4230 | Urban Hydrology and Stormwater Management (D)                | 3 |
| CEEN 4240 | Water Resources Engineering (D)                              | 3 |
| CEEN 4250 | Groundwater Engineering                                      | 3 |
| CEEN 4310 | Geographical Information Systems in Engineering and Planning | 3 |
| CEEN 4320 | Engineering Decisions Under Uncertainty                      | 3 |
| CEEN 4340 | Urban Planning for Civil Engineers (D)                       | 3 |
| CEEN 4520 | Industrial Wastewater Management (D)                         | 3 |
| CEEN 4525 | Treatment Plant Design and Operation (D)                     | 3 |

|           |   |   |
|-----------|---|---|
| CEEN 4530 | Hazardous and Industrial Waste Management | 3 |
| CEEN 4535 | Environmental Engineering Microbiology    | 3 |
| CEEN 4540 | Municipal Solid Waste Management          | 3 |
| CEEN 4545 | Air Pollution Engineering                 | 3 |
| CEEN 4715 | Sustainable Engineering (D)               | 3 |

## Construction Engineering and Management Major

In addition to the Civil Engineering and Environmental majors described above, students may elect to specialize in construction engineering and obtain a bachelor of science degree in that discipline.

| Freshman                     |       |                                    |       |
|------------------------------|-------|------------------------------------|-------|
| First Term                   | Hours | Second Term                        | Hours |
| CHEM 1001 <sup>b</sup>       | 4     | CHEM 1002 <sup>b</sup>             | 4     |
| MATH 1450 <sup>b</sup>       | 4     | MATH 1455                          | 4     |
| Core Rhetoric 1 <sup>f</sup> | 3     | Core Rhetoric 2 <sup>f</sup>       | 3     |
| GEEN 1200                    | 3     | GEEN 1210                          | 3     |
| Core elective <sup>c,1</sup> | 3     | ECON 1001 <sup>b,1</sup>           | 3     |
|                              | 17    |                                    | 17    |
| Sophomore                    |       |                                    |       |
| First Term                   | Hours | Second Term                        | Hours |
| PHYS 1003 <sup>b</sup>       | 4     | PHYS 1004 <sup>b</sup>             | 4     |
| MATH 2455                    | 3     | Math/Science Elective <sup>3</sup> | 3     |
| GEEN 2952                    | 1     | ACCO 2031                          | 3     |
| CEEN 2310                    | 3     | CEMA 3810                          | 3     |
| CEEN 2110                    | 3     | CEEN 3320                          | 3     |
| ACCO 2030                    | 3     |                                    |       |
|                              | 17    |                                    | 16    |
| Junior                       |       |                                    |       |
| First Term                   | Hours | Second Term                        | Hours |
| CEEN 3160                    | 3     | CEEN 3410                          | 3     |
| CEEN 2130                    | 3     | CEMA 4815                          | 3     |
| CEMA 3860                    | 3     | MEEN 2402                          | 3     |

|                                  |              |                                      |              |
|----------------------------------|--------------|--------------------------------------|--------------|
| MATH 4720                        | 3            | FINA 3001                            | 3            |
| HURE 3001                        | 3            | CEEN 4350                            | 3            |
| PHIL 1001 <sup>b</sup>           | 3            | CMST 1300                            | 2            |
|                                  | 18           |                                      | 17           |
| <b>Senior</b>                    |              |                                      |              |
| <b>First Term</b>                | <b>Hours</b> | <b>Second Term</b>                   | <b>Hours</b> |
| CEMA 4830                        | 3            | CEMA 4840                            | 3            |
| PHIL 2310 <sup>b</sup>           | 3            | CEEN 4997                            | 4            |
| CEMA 3850                        | 3            | CEEN Technical Elective <sup>2</sup> | 3            |
| CEEN Technical Elective (Design) | 3            | THEO elective                        | 3            |
| THEO 1001 <sup>b</sup>           | 3            | Core elective <sup>c,1</sup>         | 3            |
|                                  | 15           |                                      | 16           |
| Total credit hours: 133          |              |                                      |              |

- For footnotes b, c, d, e, f refer to the College of Engineering section of this bulletin for details related to these footnotes. As ECON 1001 Introduction to Economics meets the Core Individual and Social Behavior knowledge area, remaining Core electives should be taken in the remaining areas. The three Core electives<sup>c</sup> in this program assume that one Core elective is a Dual application Core course. If a Dual application Core elective is not taken, an additional Core elective is required and the total credit hours increase to 136.
- Note that co-op is required for the CEMA program. One academic credit is awarded for each co-op work term completed, three of which can be used as a technical elective toward degree requirements.
- A math elective and science elective in addition to the CHEM and PHYS courses outlined above in areas such as biology, geology and meteorology must be selected subject to approval by the adviser, department chair and assistant dean.

### Technical Electives:

|           |   |   |
|-----------|---|---|
| CEEN 3430 | Steel Design 1 (D)                            | 3 |
| CEEN 3440 | Reinforced Concrete Design (D)                | 3 |
| CEEN 3510 | Environmental Engineering                     | 3 |
| CEEN 3610 | Transportation Engineering                    | 3 |
| CEEN 4230 | Urban Hydrology and Stormwater Management (D) | 3 |
| CEEN 4460 | Foundation Engineering (D)                    | 3 |



|           |                             |   |
|-----------|-----------------------------|---|
| CEEN 4650 | Pavement Design (D)         | 3 |
| CEEN 4715 | Sustainable Engineering (D) | 3 |

## Civil Engineering Minor

The Department of Civil and Environmental Engineering offers a minor in civil engineering to all undergraduate students in the university except those students in civil or environmental engineering. Completion of the minor will be noted on the student's transcript if the following requirements are met:

Twenty-five hours including required courses:

|                                    |     |
|------------------------------------|-----|
| Complete one of the options below: | 4-6 |
|------------------------------------|-----|

Option 1 (4 credits)

|           |                      |
|-----------|----------------------|
| CEEN 2122 | Statics and Dynamics |
|-----------|----------------------|

Option 2 (6 credits)

|                          |                         |
|--------------------------|-------------------------|
| CEEN 2110<br>& CEEN 2120 | Statics<br>and Dynamics |
|--------------------------|-------------------------|

Required courses:

|           |                        |   |
|-----------|------------------------|---|
| CEEN 2130 | Mechanics of Materials | 3 |
|-----------|------------------------|---|

|           |                     |   |
|-----------|---------------------|---|
| CEEN 3150 | Mechanics of Fluids | 3 |
|-----------|---------------------|---|

|   |    |
|---|----|
| Twelve additional hours from the following: | 12 |
|---|----|

|           |                      |
|-----------|----------------------|
| CEEN 2310 | Elementary Surveying |
|-----------|----------------------|

|           |                          |
|-----------|--------------------------|
| CEEN 3160 | Geotechnical Engineering |
|-----------|--------------------------|

|           |                     |
|-----------|---------------------|
| CEEN 3410 | Structural Analysis |
|-----------|---------------------|

|           |                           |
|-----------|---------------------------|
| CEEN 3510 | Environmental Engineering |
|-----------|---------------------------|

|           |                            |
|-----------|----------------------------|
| CEEN 3610 | Transportation Engineering |
|-----------|----------------------------|

|           |   |
|-----------|---|
| CEMA 3810 | Introduction to Construction Management |
|-----------|---|

|  |   |
|--|---|
| Additional needed credits from any upper-division CEEN course. | 3 |
|--|---|

|                    |       |
|--------------------|-------|
| Total Credit Hours | 25-27 |
|--------------------|-------|

The program, as a whole, must have departmental approval and be completed with a C average. At least half of these credit hours must be taken at Marquette University.

## Environmental Engineering Minor

The Department of Civil and Environmental Engineering offers a minor in environmental engineering to all undergraduate students in the university except those students in civil or environmental engineering. Completion of the minor will be noted on the student's transcript if the following requirements are met:

Twenty-two hours including required courses:

|                                    |     |
|------------------------------------|-----|
| Complete one of the options below: | 4-6 |
|------------------------------------|-----|

Option 1 (4 credits)

|           |                      |
|-----------|----------------------|
| CEEN 2122 | Statics and Dynamics |
|-----------|----------------------|

Option 2 (6 credits)

|                          |                         |
|--------------------------|-------------------------|
| CEEN 2110<br>& CEEN 2120 | Statics<br>and Dynamics |
|--------------------------|-------------------------|

|                              |   |
|------------------------------|---|
| Required Courses (9 credits) | 9 |
|------------------------------|---|

|           |                   |
|-----------|-------------------|
| BIOL 1001 | General Biology 1 |
|-----------|-------------------|

|              |                     |
|--------------|---------------------|
| or CHEM 2111 | Organic Chemistry 1 |
|--------------|---------------------|

|           |                     |
|-----------|---------------------|
| CEEN 3150 | Mechanics of Fluids |
|-----------|---------------------|

|           |                           |
|-----------|---------------------------|
| CEEN 3510 | Environmental Engineering |
|-----------|---------------------------|

|   |   |
|---|---|
| Nine additional hours from the following courses: | 9 |
|---|---|

|           |                       |
|-----------|-----------------------|
| CEEN 3210 | Hydraulic Engineering |
|-----------|-----------------------|

|           |                   |
|-----------|-------------------|
| CEEN 3220 | River Engineering |
|-----------|-------------------|

|           |   |
|-----------|---|
| CEEN 4230 | Urban Hydrology and Stormwater Management |
|-----------|---|

|           |                             |
|-----------|-----------------------------|
| CEEN 4240 | Water Resources Engineering |
|-----------|-----------------------------|

|           |                         |
|-----------|-------------------------|
| CEEN 4250 | Groundwater Engineering |
|-----------|-------------------------|

|           |                         |
|-----------|-------------------------|
| CEEN 4515 | Environmental Chemistry |
|-----------|-------------------------|

|           |                                  |
|-----------|----------------------------------|
| CEEN 4520 | Industrial Wastewater Management |
|-----------|----------------------------------|

|           |                                      |
|-----------|--------------------------------------|
| CEEN 4525 | Treatment Plant Design and Operation |
|-----------|--------------------------------------|

|           |   |
|-----------|---|
| CEEN 4530 | Hazardous and Industrial Waste Management |
|-----------|---|

|           |  |
|-----------|--|
| CEEN 4535 | Environmental Engineering Microbiology |
|-----------|--|

|           |                                  |
|-----------|----------------------------------|
| CEEN 4540 | Municipal Solid Waste Management |
|-----------|----------------------------------|

|                    |       |
|--------------------|-------|
| Total Credit Hours | 22-24 |
|--------------------|-------|

The program, as a whole, must have departmental approval and be completed with a C average. At least half of these credit hours must be taken at Marquette University.

## Other Minors

Students in the civil engineering curriculum who are interested in obtaining a minor (or major) in any other area should consult with their advisers during their freshman or sophomore year to plan their schedules to meet their particular objectives with a minimum amount of overload credits. Students wishing to earn a non-engineering minor should follow the guidelines listed in the Non-Engineering Minors (p. 677) section of the College of Engineering bulletin.

## Five-Year B.S./M.S. Program

The department offers a five-year combined B.S./M.S. program which is available to outstanding undergraduate students. This program enables students to earn both their bachelor of science and master of science degrees in civil engineering in just five years. Students currently enrolled in the undergraduate program in civil and environmental engineering at Marquette University (with a GPA of 3.500 or above) may apply for admission to the five-year program during their junior year. Students must submit an application to the Graduate School, indicate their interest in the five-year program, and meet all other admission criteria as stated in the Application Requirements section of the Graduate Bulletin.

In addition to completing their undergraduate degree requirements, students will take master's level courses during their senior year. (Note that no course is permitted to satisfy both the undergraduate and graduate degree requirements in the Five-year B.S./M.S. Program of the Department of Civil and Environmental Engineering.) The remaining master's level course work is taken during the student's fifth year. Students are strongly encouraged to pursue Plan A (thesis option), in which case work on the thesis research should begin during the summer between the junior and senior years. Students will continue to gain research experience during the summer between senior and fifth years, continuing throughout the fifth year and culminating in preparation of a written thesis and defense. Combined B.S./M.S. programs following Plan B (course work option) may also be designed for completion in five years. See the Graduate Bulletin for further details.

## Department of Electrical and Computer Engineering

**Chairperson: Edwin E. Yaz, Ph.D., P.E.**

Department of Electrical and Computer Engineering website ([http://www.marquette.edu/engineering/electrical\\_computer/](http://www.marquette.edu/engineering/electrical_computer/))

The Department of Electrical and Computer Engineering offers curricula that lead to a bachelor of science degree in electrical engineering or a bachelor of science degree in computer engineering.

### Mission

The Department of Electrical and Computer Engineering embraces the missions of Marquette University and its College of Engineering. The mission of the Department of Electrical and Computer Engineering is to offer its students high-quality, up-to-date, nationally-recognized programs in electrical and computer engineering that prepare them for successful careers. This success is marked by a commitment to lifelong learning and a deep concern for the impact of their work on others; by research that advances the frontiers of technical and scientific knowledge and by service to professional and civic communities.

Engineering is the professional art of applying science and mathematics to the efficient conversion of natural resources and to the manipulation of information for human benefit. The basic concepts in this definition can be expanded, particularly for the electrical or computer engineer, by considering his or her activities. These usually involve 1) the processing and control of energy, 2) the processing and control of information, 3) the processing and control of materials. Certainly any educational experience in electrical engineering or computer engineering should be evaluated for the student in terms of its contribution in one or more of these areas.

However, this is not the only consideration. Equally important is the concept of engineering as a *dynamic* profession. In terms of the educational process, this means that attention must be directed to preparing the student for types of processing and control, which have not yet been developed or perhaps even discovered. The young engineer must be prepared to cope with devices and systems which will appear years into the future, from the viewpoint of the scientific principles on which the design of these future devices and systems will be based.

There is another important consideration in the practice of electrical and computer engineering. An engineer is called on for many and varied activities but as diversified as these may be, when carefully examined, they lead to this conclusion: *Problem-solving is the engineer's most important activity.* From the educator's viewpoint, this naturally should lead to a planned, conscious effort to develop the young engineer's problem-solving ability to the limits of his or her God-given talents. In this regard, it is important to note that since engineers' problems are sometimes *creative*, sometimes *analytic*, and sometimes *experimental*, their educational experience must give practice in each of these areas and in all types of problems. Significant design experience is an essential part of the engineer's education.

Finally, the engineer is an *individual*, a citizen who needs to develop a sense of moral and ethical values on a plane consistent with his or her education in other areas. In the educational process, this requires that a good balance be developed between the technical and social-humanistic content.

The electrical engineering and computer engineering curricula at Marquette University are carefully designed to meet the requirements of each student. Opportunities are provided for each student to develop in the direction of personal interests and at a rate corresponding to individual ability. Coherent elective programs are planned with each student consistent with his or her ability and professional goals. Moreover, superior students have the opportunity for independent study and for participation in research activity.

## Educational Objectives

The Educational Objectives for the Electrical Engineering and Computer Engineering Programs derive from the Department's vision for our graduates. Alumni of these programs, particularly those individuals who have completed their undergraduate education within the last two to five years, will be thriving professionals who apply the knowledge, skills, and values gained through their study of Computer or Electrical Engineering at Marquette University.

Specifically, our graduates are:

1. Engaged in solving significant problems in engineering or another field, as employees in the public or private sector, or as students pursuing an advanced or professional degree, or as volunteers.
2. Capably contributing as members of engineering or other problem-solving teams and communicating effectively both within the team and to the team's clients.
3. Advancing in their professional careers — taking on increasing responsibilities as well as leadership roles.
4. Continually learning, whether in a formal degree program or by participating in professional conferences and continuing education programs.
5. Acting responsibly when making professional and personal decisions — serving as examples to those around them.

## Electrical Engineering Major

The *electrical engineering major* provides students with a comprehensive electrical engineering background including course specialties in four broad categories: *Systems and Control*, *Electromagnetic Fields and Communications*, *Power and Energy* and *Computer Hardware and Software*.

| Freshman               |       |   |       |
|------------------------|-------|---|-------|
| First Term             | Hours | Second Term                               | Hours |
| CHEM 1001 <sup>b</sup> | 4     | Core elective or THEO 1001 <sup>c/b</sup> | 3     |
| EECE 1953              | 1     | Core Rhetoric 2 <sup>f</sup>              | 3     |
| ENGL 1001 <sup>f</sup> | 3     | EECE 1954                                 | 1     |
| GEEN 1200              | 3     | EECE 1610                                 | 3     |
| MATH 1450 <sup>b</sup> | 4     | GEEN 1210                                 | 3     |
|                        |       | MATH 1451 <sup>b</sup>                    | 4     |
|                        | 15    |   | 17    |
| Sophomore              |       |   |       |
| First Term             | Hours | Second Term                               | Hours |
| EECE 2010 <sup>1</sup> | 3     | ELEN 2020 <sup>1</sup>                    | 3     |
| EECE 2015 <sup>1</sup> | 1     | EECE 2035                                 | 1     |

|   |              |  |              |
|---|--------------|--|--------------|
| EECE 2710 <sup>1</sup>                  | 3            | ELEN 2040                                  | 3            |
| GEEN 2952                               | 1            | EECE 2030                                  | 3-4          |
| MATH 2450                               | 4            | MATH 2451                                  | 4            |
| PHIL 1001 <sup>b</sup>                  | 3            | PHYS 1004 <sup>b</sup>                     | 4            |
| PHYS 1003 <sup>b</sup>                  | 4            |  |              |
|   | 19           |  | 18-19        |
| <b>Junior</b>                           |              |  |              |
| <b>First Term</b>                       | <b>Hours</b> | <b>Second Term</b>                         | <b>Hours</b> |
| EECE 3010 <sup>1</sup>                  | 3            | Core Elective <sup>c</sup>                 | 3            |
| EECE 3015 <sup>1</sup>                  | 2            | ELEN 3025                                  | 2            |
| ELEN 3020                               | 3            | ELEN 3030 <sup>1</sup>                     | 3            |
| ELEN 3110 <sup>1</sup>                  | 3            | EE Elective <sup>4</sup>                   | 3            |
| PHIL 2310 <sup>b</sup>                  | 3            | EE Elective <sup>4</sup>                   | 3            |
| THEO 1001 or Core Elective <sup>b</sup> | 3            | MATH 4720                                  | 3            |
|   | 17           |  | 17           |
| <b>Senior</b>                           |              |  |              |
| <b>First Term</b>                       | <b>Hours</b> | <b>Second Term</b>                         | <b>Hours</b> |
| ELEN 3035                               | 2            | Core elective <sup>c</sup>                 | 3            |
| ELEN 4920                               | 3            | Core elective/Free elective <sup>c/d</sup> | 3            |
| EE Elective <sup>4</sup>                | 3            | EE Elective <sup>4</sup>                   | 3            |
| EE Elective <sup>4</sup>                | 3            | ELEN 4998                                  | 3            |
| EE Elective <sup>4</sup>                | 3            | Science/Math elective <sup>3</sup>         | 3            |
| THEO elective <sup>e</sup>              | 3            |  |              |
|   | 17           |  | 15           |
| Total credit hours: 135-136             |              |  |              |

- a Refer to the College of Engineering section of this bulletin for details relating to footnotes b, c, d, e and f.
- 1 A C or better grade is required in this course to meet the prerequisites for subsequent computer and/or electrical engineering required courses.
- 2 These electives will normally be an upper division elective in EECE, COEN, COSC, MATH, PHYS and/or CHEM. Other courses may be acceptable with prior approval of the department.
- 3 The science/math elective can be fulfilled with any upper division math or physics course or any biology or chemistry course for which the prerequisite requirements are met.
- 4 The six EE Electives must satisfy both a breadth and a depth requirement. To satisfy the breadth requirement, the student must take EE Electives in at least three of the following four areas: Systems and Control; Electromagnetics, Power and Energy; Communications; and Computer Hardware and Software. To satisfy the depth requirement, the student must take at least three EE Electives in one of the aforementioned areas.

## Areas of Concentration within Electrical Engineering

The Electrical Engineering curriculum has six electives designated as EE electives. At least five of these electives must be courses with an ELEN, EECE or COEN number as listed for the concentration areas. The remaining two electives can be in any technical area. The student, in consultation with his or her adviser, must design the elective program to meet both a breadth requirement and a depth requirement. To meet the breadth requirement, students must choose at least one course from each of at least three of the concentration areas. To meet the depth requirement, at least three courses must be chosen from within a single concentration area. These areas of concentration and the courses in each area are described below.

### ***Systems and Control***

Control system engineering develops a general background in automatic controls and systems engineering with a fundamental emphasis on linear feedback systems and applications of computers. Course work in advanced controls, digital systems, and large-scale design is included. The following ELEN and EECE elective courses are available in the Systems and Control area:

|           |  |   |
|-----------|--|---|
| ELEN 4310 | Control Systems                                  | 3 |
| ELEN 4320 | Digital Control Systems                          | 3 |
| EECE 4410 | Integrated Microelectronic Circuits              | 3 |
| EECE 4510 | Digital Signal Processing                        | 3 |
| ELEN 4430 | Physical Principles of Solid State Devices       | 3 |
| ELEN 4450 | Surface Acoustic Wave Devices                    | 3 |
| ELEN 4460 | Sensor Devices: Theory, Design, and Applications | 3 |

|           |                              |     |
|-----------|------------------------------|-----|
| ELEN 4565 | Optical Fiber Communications | 3   |
| ELEN 4390 | Developments in Control      | 1-3 |

### ***Electromagnetic Fields and Communication***

Applied electromagnetics and waves involve high frequency waves as applied to communications and sensing applications. Principles and applications of wireless communications are included. Fiber optics, antennas, modern communication cell systems, analog and digital modulation techniques, and sensor principles and applications are investigated. The following ELEN and EECE elective courses are available in the Electromagnetic Fields and Communication area:

|           |   |     |
|-----------|---|-----|
| ELEN 3120 | Electromagnetic Fields 2                    | 3   |
| ELEN 4130 | Antenna Theory and Design                   | 3   |
| ELEN 4150 | Applied Finite Elements in Electromagnetics | 3   |
| EECE 4510 | Digital Signal Processing                   | 3   |
| ELEN 4560 | Introduction to Communication Systems       | 3   |
| ELEN 4565 | Optical Fiber Communications                | 3   |
| ELEN 4570 | Wireless Communications                     | 3   |
| ELEN 4190 | Developments in Electromagnetics            | 1-3 |
| ELEN 4590 | Developments in Communications              | 1-3 |

### ***Power and Energy***

Power engineering emphasizes the control and conversion of electrical energy. Motors and generators with their associated electronic power controls, power distribution systems and control systems are examined. Modern computer-aided analysis is brought to bear on the design and analysis of power devices and power systems. The following ELEN and EECE elective courses are available in the Power and Energy area:

|           |   |     |
|-----------|---|-----|
| ELEN 3210 | Electric Drives                                       | 3   |
| ELEN 4210 | Design and Analysis of Electric Motor-Drive Systems   | 3   |
| ELEN 4220 | Power Electronics for Renewable Energy Systems        | 3   |
| ELEN 4230 | Renewable and Legacy Electric Energy Systems Analysis | 3   |
| ELEN 4240 | Protection and Monitoring of Electric Energy Systems  | 3   |
| ELEN 4250 | Transients in Electric Energy Systems and Devices     | 3   |
| ELEN 4290 | Developments in Energy and Power                      | 1-3 |

### ***Computer Hardware and Software***

The computer hardware and software concentration provides courses that give a greater exposure to and more in-depth study of computer principles and applications. The emphasis in these courses is on



small computers, particularly microcomputer concepts and applications. The following COEN courses are available in the Computer Hardware and Software area:

|           |   |   |
|-----------|---|---|
| COEN 4620 | Modern Programming Practices                      | 3 |
| COEN 4630 | Software Testing                                  | 3 |
| COEN 4710 | Computer Hardware                                 | 3 |
| COEN 4720 | Embedded Systems Design                           | 3 |
| COEN 4730 | Computer Architecture                             | 3 |
| COEN 4810 | Database Applications                             | 3 |
| COEN 4820 | Operating Systems and Networking                  | 3 |
| COEN 4830 | Introduction to Computer Graphics                 | 3 |
| COEN 4840 | Computer Security                                 | 3 |
| COEN 4850 | Introduction to Intelligent Systems               | 3 |
| COEN 4860 | Introduction to Neural Networks and Fuzzy Systems | 3 |
| COEN 4870 | Evolutionary Computation                          | 3 |
| EECE 4410 | Integrated Microelectronic Circuits               | 3 |

## Graduate Study

The ELEN curriculum provides an excellent foundation for students wishing to pursue graduate studies in most electrical engineering graduate programs.

## Computer Engineering Major

In addition to the electrical engineering major outlined above, the Department of Electrical and Computer Engineering offers a curriculum leading to a bachelor of science degree in computer engineering. The computer engineering curriculum provides a solid foundation in electrical engineering fundamentals, as well as a comprehensive study of computer software and hardware systems. Through an ample elective program, students can customize their studies to their individual interests, emphasizing hardware engineering, software engineering, intelligent systems or applications.

| Freshman               |       |   |       |
|------------------------|-------|---|-------|
| First Term             | Hours | Second Term                               | Hours |
| CHEM 1001 <sup>b</sup> | 4     | Core elective or THEO 1001 <sup>c/b</sup> | 3     |
| EECE 1953              | 1     | Core Rhetoric 2 <sup>f</sup>              | 3     |
| ENGL 1001 <sup>f</sup> | 3     | EECE 1954                                 | 1     |
| GEEN 1200              | 3     | EECE 1610                                 | 3     |
| MATH 1450 <sup>b</sup> | 4     | GEEN 1210                                 | 3     |

|                                      |              |   |              |
|--------------------------------------|--------------|---|--------------|
|                                      |              | MATH 1451 <sup>b</sup>                      | 4            |
|                                      | 15           |   | 17           |
| <b>Sophomore</b>                     |              |   |              |
| <b>First Term</b>                    | <b>Hours</b> | <b>Second Term</b>                          | <b>Hours</b> |
| EECE 2010 <sup>1</sup>               | 3            | COEN 2020                                   | 3            |
| EECE 2015 <sup>1</sup>               | 1            | EECE 2030                                   | 3            |
| EECE 2710 <sup>1</sup>               | 3            | EECE 2035                                   | 1            |
| GEEN 2952                            | 1            | MATH 2451                                   | 4            |
| MATH 2450                            | 4            | PHYS 1004 <sup>b</sup>                      | 4            |
| PHIL 1001 <sup>b</sup>               | 3            | THEO 1001 or Core Elective <sup>b/c</sup>   | 3            |
| PHYS 1003 <sup>b</sup>               | 4            |   |              |
|                                      | 19           |   | 18           |
| <b>Junior</b>                        |              |   |              |
| <b>First Term</b>                    | <b>Hours</b> | <b>Second Term</b>                          | <b>Hours</b> |
| COEN 2610                            | 3            | COEN 4710                                   | 3            |
| COSC 2010                            | 3            | COEN 4820                                   | 3            |
| EECE 3010                            | 3            | COEN/Technical elective <sup>2</sup>        | 3            |
| EECE 3015                            | 2            | Core Elective <sup>c</sup>                  | 3            |
| MATH 2105                            | 3            | Core Elective <sup>c</sup>                  | 3            |
| PHIL 2310 <sup>b</sup>               | 3            | MATH 4720                                   | 3            |
|                                      | 17           |   | 18           |
| <b>Senior</b>                        |              |   |              |
| <b>First Term</b>                    | <b>Hours</b> | <b>Second Term</b>                          | <b>Hours</b> |
| COEN 4720                            | 3            | COEN 4998                                   | 3            |
| COEN 4920                            | 3            | COEN/Technical Elective <sup>2</sup>        | 3            |
| COEN/Technical Elective <sup>2</sup> | 3            | COEN/Technical Elective <sup>2</sup>        | 3            |
| COEN/Technical Elective <sup>2</sup> | 3            | Core Elective/ Free Elective <sup>c/d</sup> | 3            |
| COEN/Technical Elective <sup>2</sup> | 3            | Theology elective <sup>e</sup>              | 3            |
|                                      | 15           |   | 15           |
| Total credit hours: 134              |              |   |              |

- a Refer to the College of Engineering section of this bulletin for details relating to footnotes b, c, d, e and f.
- 1 A C or better grade is required in this course to meet the prerequisites for subsequent computer and/or electrical engineering required courses.
- 2 At least five of the six electives must be COEN design electives. The remaining elective can be in any technical area.
- 3 Of the five COEN design electives, one must be in the Hardware Engineering area, one must be in the Software Engineering area, and one must be in either the Intelligent Systems area or the Applications area. Of the five COEN design electives, three must be in one of the following areas: Hardware Engineering, Software Engineering, Intelligent Systems or Applications. A course listed in two concentration areas may be counted toward only one elective requirement.

## Areas of Concentration within Computer Engineering

The Computer Engineering curriculum has six electives designated as COEN/TECH electives. At least five of these electives must be courses with a COEN number. The remaining elective can be in any technical area. The student, in consultation with his or her adviser, must design the elective program to meet both a breadth requirement and a depth requirement. To meet the breadth requirement, one COEN elective must be in the Hardware area, a second COEN elective must be in the Software area and a third COEN elective must be in either the Intelligent Systems area or the Applications area. To meet the depth requirement, a total of three COEN electives must be in one of the following four areas: Hardware, Software, Intelligent Systems and Applications. These areas of concentration and the courses in each area are described below.

### Hardware

Hardware includes the study of computer architectures, computer chip technology, peripheral devices, signal processing, interface design, and the like. The following COEN elective courses are available in the Hardware area:

|           |                                     |   |
|-----------|-------------------------------------|---|
| COEN 4730 | Computer Architecture               | 3 |
| COEN 4790 | Developments in Computer Hardware   | 3 |
| EECE 4410 | Integrated Microelectronic Circuits | 3 |
| EECE 4510 | Digital Signal Processing           | 3 |

### Software

Software emphasizes the design of software systems and includes concerns such as the user interface, expansibility and maintainability, efficiency in time and computing resources, software testing, security, etc. The following COEN elective courses are available in the Software area:

|           |                                      |   |
|-----------|--------------------------------------|---|
| COEN 4610 | Object-Oriented Software Engineering | 3 |
| COEN 4620 | Modern Programming Practices         | 3 |

|           |                                   |   |
|-----------|-----------------------------------|---|
| COEN 4630 | Software Testing                  | 3 |
| COEN 4690 | Developments in Computer Software | 3 |
| COEN 4840 | Computer Security                 | 3 |

## Intelligent Systems

Intelligent Systems includes the study of artificial intelligence, neural networks, evolutionary computing, design of algorithms, and computer security models. Students wishing to concentrate in this area are encouraged to take ELEN 3020 as one of their non-COEN electives. The following COEN elective courses are available in the Intelligent Systems area:

|           |   |   |
|-----------|---|---|
| COEN 4650 | Introduction to Algorithms                        | 3 |
| COEN 4840 | Computer Security                                 | 3 |
| COEN 4850 | Introduction to Intelligent Systems               | 3 |
| COEN 4860 | Introduction to Neural Networks and Fuzzy Systems | 3 |
| COEN 4870 | Evolutionary Computation                          | 3 |
| EECE 4510 | Digital Signal Processing                         | 3 |

## Applications

The Applications area includes the study of database systems, computer graphics, software testing, and computer security. The following COEN elective courses are available in the Applications area:

|           |                                   |   |
|-----------|-----------------------------------|---|
| COEN 4620 | Modern Programming Practices      | 3 |
| COEN 4630 | Software Testing                  | 3 |
| COEN 4690 | Developments in Computer Software | 3 |
| COEN 4810 | Database Applications             | 3 |
| COEN 4830 | Introduction to Computer Graphics | 3 |
| COEN 4840 | Computer Security                 | 3 |

## Graduate Study

The COEN curriculum provides an excellent foundation for students wishing to pursue graduate studies in most computer engineering, computer science, and electrical engineering graduate programs. However, students who wish to enter the Marquette University graduate program in Electrical Engineering must take ELEN 3020 Linear Systems Analysis as one of their two non-COEN electives in order to meet the entrance requirements.

## Electrical Engineering Minor

The Department of Electrical Engineering offers a minor in electrical engineering to undergraduate students in the university except those students in electrical engineering. Completion of the minor will be noted on the student's transcript if the following requirements are met:

A minimum of twenty-eight hours including:

|           |                                       |   |
|-----------|---------------------------------------|---|
| EECE 2010 | Electric Circuits 1                   | 3 |
| EECE 2015 | Circuits Laboratory 1                 | 1 |
| ELEN 2020 | Electric Circuits 2                   | 3 |
| EECE 2030 | Digital Electronics                   | 4 |
| EECE 2035 | Circuits Laboratory 2                 | 1 |
| EECE 3010 | Electronic Devices and Applications   | 3 |
| ELEN 3020 | Linear Systems Analysis               | 4 |
| ELEN 3025 | Electrical Instrumentation Laboratory | 2 |
| ELEN 3030 | Analog Electronics                    | 4 |

One of the following:

|              |  |  |
|--------------|--|--|
| EECE 2710    | Introduction to Computer Hardware and Software |  |
| or ELEN 3110 | Electromagnetic Fields 1                       |  |
| EECE 3015    | Digital Electronics Laboratory                 |  |
| or ELEN 3035 | Analog Electronics Laboratory                  |  |

At least half of these credit hours must be taken at Marquette University and a C or better average must be earned in the relevant courses taken at Marquette University.

## Computer Engineering Minor

The Department of Electrical and Computer Engineering offers a minor in computer engineering to undergraduate students in the university except those students in computer engineering. Completion of the minor will be noted on the student's transcript if the following requirements are met: A minimum of thirty hours including:

|           |  |     |
|-----------|--|-----|
| EECE 2010 | Electric Circuits 1                            | 3   |
| EECE 2015 | Circuits Laboratory 1                          | 1   |
| COEN 2020 | Electric Circuits 2                            | 3   |
| EECE 2030 | Digital Electronics                            | 3-4 |
| EECE 2035 | Circuits Laboratory 2                          | 1   |
| COEN 2610 | Software Methodologies                         | 3   |
| EECE 2710 | Introduction to Computer Hardware and Software | 3   |

|           |                                     |   |
|-----------|-------------------------------------|---|
| EECE 3010 | Electronic Devices and Applications | 3 |
| COEN 4710 | Computer Hardware                   | 3 |
| COEN 4720 | Embedded Systems Design             | 3 |
| COEN 4820 | Operating Systems and Networking    | 3 |

At least half of these credit hours must be taken at Marquette University and a C or better average must be earned in the relevant courses taken at Marquette University.

## Computer Science Minor

Students in Electrical or Computer Engineering may obtain a minor in computer science by following the guidelines listed in the Non-Engineering Minors (p. 677) section of the College of Engineering bulletin.

## Other Minors

Students in the electrical engineering curriculum who are interested in obtaining a minor (or major) in any other area should consult with their advisers during their freshman or sophomore year in order to plan their schedules to meet their particular objectives with a minimum amount of overload credits. Students wishing to achieve a non-engineering minor should follow the guidelines listed in the Non-Engineering Minors (p. 677) section of the College of Engineering bulletin.

## Five Year B.S./M.S. Program

This program allows students to receive a bachelor of science degree in either electrical engineering or computer engineering, depending on the student's undergraduate major, and a master of science degree in electrical engineering in five years. Students with qualifying grade point averages enroll in the program during their junior year. Additional information about this program is available in the most recent Marquette University Graduate Bulletin.

# Department of Mechanical Engineering

**Chairperson: Kyuil Kim, Ph.D. P.E.**

Department of Mechanical Engineering website (<http://www.marquette.edu/engineering/mechanical/>)

## Mission

In embracing the missions of the university and the College of Engineering, it is the mission of the Department of Mechanical Engineering to offer a high quality, up-to-date, nationally-recognized engineering program which prepares students for successful careers. This success is marked by the graduates' commitment to lifelong learning; a deep concern for the impact of their work on others; research that advances technical and scientific knowledge; and service to professional and civic communities. The department also strives to develop students and faculty who will be recognized as exceptional in their pursuit of excellence, sense of community, spirit of collaboration and ability to define problems and accomplish goals.

## Educational Objectives

Mechanical Engineering graduates are prepared to:

1. Solve mechanical engineering problems in the areas of mechanical systems, thermal/fluid systems, and manufacturing systems by applying fundamental knowledge in mathematics and science.
2. Solve open-ended (design-oriented) problems by judiciously applying the skills of perception, synthesis, analysis, selection/rationale, realization, verification, collaboration and communication.
3. Collaborate effectively within a professional environment by consistently demonstrating the personal characteristics of productivity, responsibility, integrity, supportiveness and enthusiasm.
4. Take ownership of personal and career advancement.

## Mechanical Engineering Major

Mechanical engineering is that branch of engineering, which is concerned with mechanical and energy systems, along with the intelligent use of modern materials. Mechanical engineers conceive, plan, design and direct the manufacturing, distribution and operation of a wide variety of devices, machines and systems for energy conversion, environmental control, materials processing, transportation, materials handling and other purposes. The field of mechanical engineering is very broad, and the profession thus provides an ideal base for interdisciplinary activities.

Engineers are constantly challenged to advance and implement modern technologies. This challenge can be met provided that one obtains a sound knowledge of the fundamental principles of the engineering sciences. The mechanical engineering curriculum is designed to provide not only a thorough understanding of the engineering sciences but also of the principles of manufacturing and organization that are used to implement these fundamentals in practical engineering applications.

Integrated with the technical and scientific content of the program is a series of required and elective courses in the humanities, social sciences, theology, philosophy and communication arts. These courses provide the student with an understanding of society and an awareness of his or her social responsibilities.

In order to accommodate the students' professional interests, the department offers electives in a number of areas of study within mechanical engineering. In choosing electives, the student and faculty adviser confer to determine those courses which best meet the needs and interests of the

individual student. By carefully selecting technical elective course work, the student can obtain in-depth knowledge in one or possibly two areas of study to compliment the broad, fundamental, required courses.

The mechanical engineering curriculum is outlined below and then followed by a description of the areas of study and the corresponding technical elective courses for each.

## Typical Program for Mechanical Engineering Majors

| Freshman                   |       |                                 |       |
|----------------------------|-------|---------------------------------|-------|
| First Term                 | Hours | Second Term                     | Hours |
| ENGL 1001 <sup>b</sup>     | 3     | Core Rhetoric 1002 <sup>f</sup> | 3     |
| GEEN 1200                  | 3     | GEEN 1210                       | 3     |
| MATH 1450 <sup>b</sup>     | 4     | MATH 1451 <sup>b</sup>          | 4     |
| PHYS 1003 <sup>b</sup>     | 4     | PHYS 1004 <sup>b</sup>          | 4     |
| Core elective <sup>c</sup> | 3     | Core elective <sup>c</sup>      | 3     |
|                            | 17    |                                 | 17    |
| Sophomore                  |       |                                 |       |
| First Term                 | Hours | Second Term                     | Hours |
| CHEM 1001 <sup>b</sup>     | 4     | CHEM 1002 <sup>b</sup>          | 4     |
| MEEN 2110                  | 3     | MEEN 2120                       | 3     |
| GEEN 2952                  | 1     | MEEN 2130                       | 3     |
| MEEN 2460                  | 3     | MEEN 2210                       | 3     |
| MATH 2450                  | 4     | MATH 2451                       | 4     |
| Core elective <sup>c</sup> | 3     |                                 |       |
|                            | 18    |                                 | 17    |
| Junior                     |       |                                 |       |
| First Term                 | Hours | Second Term                     | Hours |
| MEEN 3220                  | 3     | MEEN 3210                       | 3     |
| MEEN 3310                  | 3     | MEEN 3250                       | 4     |
| MEEN 3320                  | 3     | MEEN 3330                       | 3     |
| MEEN 3426                  | 3     | MEEN 3443                       | 3     |
| MEEN 3460                  | 3     | PHIL 2310 <sup>b</sup>          | 3     |
| PHIL 1001 <sup>b</sup>     | 3     |                                 |       |
|                            | 18    |                                 | 16    |



| <b>Senior</b>              |              |                                   |              |
|----------------------------|--------------|-----------------------------------|--------------|
| <b>First Term</b>          | <b>Hours</b> | <b>Second Term</b>                | <b>Hours</b> |
| MEEN 3260                  | 3            | MEEN 4998                         | 3            |
| MEEN 3340                  | 3            | MEEN elective <sup>2</sup>        | 3            |
| MEEN 4920                  | 3            | MEEN elective <sup>2</sup>        | 3            |
| MEEN 4590 <sup>1</sup>     | 1            | THEO elective                     | 3            |
| MEEN elective <sup>2</sup> | 3            | Core/Free elective <sup>c/d</sup> | 3            |
| THEO 1001 <sup>e</sup>     | 3            |                                   |              |
|                            | 16           |                                   | 15           |
| Total credit hours: 134    |              |                                   |              |

a For footnotes b, c, d, e, and f refer to the College of Engineering section of this bulletin for details related to these footnotes.

1 As part of the requirements for this course, students must take the state of Wisconsin Fundamentals of Engineering exam or that of another state.

2 At least two of three MEEN electives must be taken from the approved list of MEEN electives. One course not on the list may be taken with department approval.

## Areas of Study

### Energy Systems

Economic growth and development is strongly dependent upon the development and conversion of energy resources. Assurance that supplies can meet demands without excessive monetary and environmental costs will depend upon political, economic, and technological decisions. But, in any case, the key to solving the technical problems is engineering the technological development of new and better energy conversion processes and systems. The courses offered in the energy area provide a most up-to-date background for the design of traditional energy systems and for design, research and development of new systems.

Students interested in Energy Systems may select courses from the following list as their MEEN electives:

|           |  |   |
|-----------|--|---|
| MEEN 2402 | Engineering Economy                            | 3 |
| MEEN 4265 | Intermediate Finite Element Methods            | 3 |
| MEEN 4310 | Internal Combustion Engines                    | 3 |
| MEEN 4330 | Optics, Lasers and Spectroscopy in Engineering | 3 |
| MEEN 4350 | Transport Phenomena                            | 3 |

|           |                                  |   |
|-----------|----------------------------------|---|
| MEEN 4360 | Intermediate Thermodynamics      | 3 |
| MEEN 4410 | Experimental Design              | 3 |
| MEEN 4931 | Topics in Mechanical Engineering | 3 |

## Manufacturing Systems

Manufacturing engineering is that specialty which requires such education and experience to understand, apply, and control engineering procedures and methods of production of industrial commodities and products. It requires the ability to plan the practices of manufacturing, to research and develop the tools, processes, machines, materials and equipment and to integrate the facilities and systems for producing quality products with optimal expenditures. The courses, including manufacturing processes, material processing, manufacturing system and reliability, offered in this area have the aim of preparing the student to face the challenges of rapidly changing technologies present in the modern manufacturing environment.

Students interested in Manufacturing Systems may select courses from the following list as their MEEN electives:

|           |                                     |   |
|-----------|-------------------------------------|---|
| MEEN 2402 | Engineering Economy                 | 3 |
| MEEN 4220 | Intermediate Dynamics               | 3 |
| MEEN 4240 | Polymers and Polymer Composites     | 3 |
| MEEN 4275 | Mechatronics                        | 3 |
| MEEN 4410 | Experimental Design                 | 3 |
| MEEN 4430 | Powder Metallurgy                   | 3 |
| MEEN 4440 | Processing and Forming of Materials | 3 |
| MEEN 4475 | Ergonomics                          | 3 |
| MEEN 4485 | Welding Engineering                 | 3 |
| MEEN 4931 | Topics in Mechanical Engineering    | 3 |

## Mechanical Systems

This area provides the students with the theoretical, computational, and experimental tools that are necessary for the detailed analysis and design of mechanical systems including machine elements such as linkages, gears, and other power transmission components, precision tools and machinery, etc. The courses offered in this area enable the student to understand the rationale and methodology of the overall design process of mechanical systems, proceeding from the conceptualization stage through the detailed design and implementation phases.

Students interested in Mechanical Systems may select courses from the following list as their MEEN electives:

|           |                                     |   |
|-----------|-------------------------------------|---|
| MEEN 2402 | Engineering Economy                 | 3 |
| MEEN 4220 | Intermediate Dynamics               | 3 |
| MEEN 4230 | Intermediate Mechanics of Materials | 3 |

|           |  |   |
|-----------|--|---|
| MEEN 4240 | Polymers and Polymer Composites                      | 3 |
| MEEN 4245 | Fatigue and Fracture Mechanics                       | 3 |
| MEEN 4250 | Design of Machine Elements 2                         | 3 |
| MEEN 4265 | Intermediate Finite Element Methods                  | 3 |
| MEEN 4270 | Physical Systems Modeling                            | 3 |
| MEEN 4275 | Mechatronics   | 3 |
| MEEN 4410 | Experimental Design                                  | 3 |
| MEEN 4420 | Failure Analysis                                     | 3 |
| MEEN 4450 | Mechanical Behavior of Materials                     | 3 |
| MEEN 4570 | Introduction to Biomaterials Science and Engineering | 3 |
| MEEN 4931 | Topics in Mechanical Engineering                     | 3 |

## Mechanical Engineering Minor

The Department of Mechanical Engineering offers a minor in mechanical engineering to all undergraduate students in the university except those students in mechanical engineering. Completion of the minor will be noted on the student's transcript if the following requirements are met:

Thirty hours including the following courses or their equivalents:

|                    |                                       |   |
|--------------------|---------------------------------------|---|
| MEEN 2110          | Statics                               | 3 |
| MEEN 2120          | Dynamics                              | 3 |
| MEEN 2130          | Mechanics of Materials                | 3 |
| MEEN 2460          | Materials Science                     | 3 |
| MEEN 3220          | Dynamics of Mechanical Systems        | 3 |
| MEEN 3250          | Design of Machine Elements 1          | 4 |
| MEEN 3210          | Multidisciplinary Engineering Systems | 3 |
| MEEN 3310          | Thermodynamics 1                      | 3 |
| MEEN 3330          | Fundamentals of Heat Transfer         | 3 |
| MEEN 3340          | Thermodynamics 2                      | 3 |
| Two MEEN electives |                                       | 6 |

The program, as a whole, must have departmental approval and be completed with a C average. Interested students should consult with the department in order to develop an acceptable program. At least 15 credit hours must be taken at Marquette University.

## **Five Year B.S./M.S. Program**

This program allows students to receive a bachelor of science degree and a master of science degree in mechanical engineering in just five years. Only the thesis option is available with this program. Qualified students (3.500/4.000 GPA) who are enrolled in the Mechanical Engineering Department at Marquette University may apply for admission to this program during their undergraduate junior year. Students must submit an application to the Graduate School, indicate their interest in the five year program, and meet all other admission criteria as stated in the Application Requirements section. (GRE test scores are not required.) See Mechanical Engineering section of Graduate School Bulletin for details.

## Non-Engineering Minors

Students wishing to achieve a minor in business administration, computer science, mathematics or physics should follow the guidelines below. In general, if any other major or minor program is desired, students should consult the appropriate area in the Undergraduate Bulletin for guidelines and requirements.

### Business Administration Minor

Completion of the minor will be noted on a student's transcript if the following requirements are met:

#### 1. Required Courses

|                    |                                      |    |
|--------------------|--------------------------------------|----|
| ECON 2003          | Principles of Microeconomics         | 3  |
| ECON 2004          | Principles of Macroeconomics         | 3  |
| ACCO 2030          | Principles of Financial Accounting   | 3  |
| ACCO 2031          | Principles of Managerial Accounting  | 3  |
| BUAD 1002          | Computer Literacy in Business (a)    | 0  |
| MANA 2028          | Business Statistics (b)              | 3  |
| FINA 3001          | Introduction to Financial Management | 3  |
| MANA 3001          | Behavior and Organization (c)        | 3  |
| MARK 3001          | Introduction to Marketing (c)        | 3  |
| Total Credit Hours |                                      | 24 |

- a GEEN 1210 Engineering Discovery 2 or BIEN 1120 Introduction to Computing for Biomedical Engineers will substitute for this requirement.
- b MEEN 3426 Engineering Statistics or MATH 4720 Statistical Methods can substitute for MANA 2028 Business Statistics.
- c Electrical engineering students may utilize either MANA 3001 Behavior and Organization or MARK 3001 Introduction to Marketing as an EECE/Technical elective, or COEN/technical elective.

#### 2. A C or better grade must be earned in each course.

Careful planning with an academic adviser can minimize the number of additional hours beyond the normal graduation requirements to 15-21 hours depending on the degree program.

### Computer Science Minor

Students Electrical or Computer Engineering may obtain a minor in computer science by completing the following course requirements with a grade of C or better in each of:

|   |  |    |
|---|--|----|
| EECE 1610   | Introduction to Computer Programming           | 3  |
| EECE 2710   | Introduction to Computer Hardware and Software | 3  |
| COSC 2010   | Data Structures for Engineers                  | 3  |
| MATH 2105   | Discrete Mathematics for Engineers             | 3  |
| Plus three additional courses (nine credits) from the following list: |  | 9  |
| COSC 3100   | Data Structures and Algorithms 2               |    |
| COSC 3300   | Networks and Internets                         |    |
| COSC 3410   | Programming Languages                          |    |
| COSC 3550   | Programming Computer Games                     |    |
| COSC 4110   | Formal Languages and Computability             |    |
| COSC 4400   | Compiler Construction                          |    |
| COSC 4610   | Data Mining                                    |    |
| COSC 4860   | Component-Based Software Construction          |    |
| Total Credit Hours  |  | 21 |

Careful planning with an academic adviser can minimize the number of additional hours needed.

## Mathematics Minor

Students in engineering may obtain a minor in mathematics by completing the following course requirements with a grade of C or better in each:

|   |                        |    |
|---|------------------------|----|
| MATH 1450   | Calculus 1             | 4  |
| MATH 1451   | Calculus 2             | 4  |
| MATH 2450   | Calculus 3             | 4  |
| MATH 2451   | Differential Equations | 4  |
| Plus nine additional hours of upper-division MATH courses |                        | 9  |
| Total Credit Hours  |                        | 25 |

Careful planning with an academic adviser can minimize the number of additional hours needed.

## Physics Minor

Students in engineering may obtain a minor in physics by completing the following course requirements with a grade of C or better in each:

|  |  |    |
|--|--|----|
| PHYS 1003  | General Physics with Introductory Calculus 1 | 4  |
| or PHYS 1013   | Classical and Modern Physics with Calculus 1 |    |
| PHYS 1004  | General Physics with Introductory Calculus 2 | 4  |
| or PHYS 1014   | Classical and Modern Physics with Calculus 2 |    |
| Plus 12 additional hours of upper-division PHYS courses. |  | 12 |
| Total Credit Hours                                       |  | 20 |

Students who take ELEN 3110 Electromagnetic Fields 1 or ELEN 3120 Electromagnetic Fields 2 may not take PHYS 4031 Electricity and Magnetism 1 or PHYS 4032 Electricity and Magnetism 2 to satisfy the physics minor requirements; both ELEN 3110 Electromagnetic Fields 1 or ELEN 3120 Electromagnetic Fields 2 count toward the upper-division PHYS course requirements.

# Course Descriptions

## Biomedical Engineering

### **BIEN 1100. Introduction to Biomedical Engineering Methods 1. 2 cr. hrs.**

Introduction to biomedical engineering design and problem solving using. Key elements include physiologic signals and data acquisition, instrumentation, graphics, measurement and error, teamwork and decision-making. Problem-solving elements will be applied to real-world biomedical problems introduced by practicing biomedical engineers as well as faculty.

### **BIEN 1110. Introduction to Biomedical Engineering Methods 2. 2 cr. hrs.**

Continuation of BIEN 1100. Key elements include modeling, fluid mechanics, rehabilitation engineering, and entrepreneurship. Problem-solving and design elements are applied to real-world biomedical problems introduced by practicing biomedical engineers as well as faculty. Prereq: BIEN 1100.

### **BIEN 1120. Introduction to Computing for Biomedical Engineers. 2 cr. hrs.**

Introductory hands-on experience in computer programming, MATLAB, and Solid Modeling and CAD for biomedical engineers. Involves learning linear programming in C and creating flow-charts to solve biomedical applications. Computing topics will include syntax, data types, control flow and algorithm development. Biomedical applications include analyzing physiological signals, biological event detection, and biomechanical analysis. Students learn how to use MATLAB to solve biomedical applications. Solid modeling and CAD will be studied in the context of biomedical engineering design. Laptop required.

### **BIEN 2100. Statistics for Biomedical Engineering. 1 cr. hr.**

Numerical and graphical summary of biomedical data and the use of statistics in problem solving for a variety of case studies in biomedical research, medical device design and clinical trials. Prereq: MATH 1450.

### **BIEN 2300. Biomedical Circuits and Electronics. 4 cr. hrs.**

An experience in electrical circuits (AC and DC), electronic devices (Junction, Transistor, Operational, Amplifier) bridges, digital circuits and Boolean implementation, combinational and sequential logic, memories. Use of P-Spice software. Analysis and design. Prereq: PHYS 1004 or PHYS 1014.

### **BIEN 2400. Medical Device Design Constraints. 1 cr. hr.**

Students learn about legal, ethical, regulatory, economic, environmental, cultural, and social constraints that affect the design of medical devices. Students identify relevant, applicable design constraints and understand the impact of these constraints on the design process and the project schedule. Prereq: Soph. standg. BIEN major, or cons. of instr.

### **BIEN 3200. Computer Applications in Biomedical Engineering. 3 cr. hrs.**

Design and implementation of computer techniques for the acquisition and analysis of biomedical data and the modeling of physiologic phenomena. Emphasis on physiological data acquisition, statistical description of physiological data, time domain and frequency domain methods for physiological signal conditioning and processing, and numerical methods for quantitative interpretation of physiological data using C programming language. Prereq: BIEN 1110 or equiv.



**BIEN 3300. Signals and Systems for Biomedical Engineering. 3-4 cr. hrs.**

Mathematical models of continuous-time signals and systems are studied in this course. The time domain viewpoint is developed for linear time invariant systems using the impulse response and convolution integral. The frequency domain viewpoint is also explored through the Fourier Series and Fourier Transform. Basic filtering concepts including simple design problems are covered. Application of the Laplace transform to block diagrams, linear feedback, and stability including Bode plots are discussed. The sampling theorem, the z-transform, and the Discrete Fourier Transform are introduced. Examples of electrical, mechanical, and biomedical signals and systems are used extensively throughout the course. Offered both terms. 3 hrs. lec. Prereq: ELEN 2020 with minimum grade of C and MATH 2451; or BIEN 2300 with minimum grade of C and MATH 2451; or ELEN 2020 with minimum grade of C and MATH 2455; or BIEN 2300 with minimum grade of C and MATH 2455.

**BIEN 3310. Control Systems for Biomedical Engineering. 3 cr. hrs.**

Provides an introduction to the principles of control systems theory for biomedical engineers. Mathematical techniques to characterize and design control systems will be studied in the context of physiological, bioelectrical, biochemical and biomechanical systems. Topics include frequency and time-domain modeling of physiological control systems, feedback, stability, steady-state error, design, root-locus, state-space techniques, and nonlinear control. Simulation using MATLAB and Simulink will be used to provide hands-on experience in the design of biomedical control systems. Prereq: BIEN 3300.

**BIEN 3400. Clinical Issues in Biomedical Engineering Design. 1 cr. hr.**

Develops clinical literacy in areas including medical terminology, working with medical professionals, professional conduct in the clinical environment, operating room workflow, and the technical needs of surgeons, nurses, dentists, and others. Students observe procedures in the clinical environment and learn to listen, ask questions, and identify problems, unmet needs and opportunities for new product development. Students participate in field trips to obtain hands-on experience with various medical and dental devices. A project proposal for a new medical device or technology is required at the end of the course. Prereq: BIEN major and jr. stdng; or cons. of instr.

**BIEN 3991. Co-op Work Period 1. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3991, 3992, etc. Fee. SNC/UNC grade assessment.

**BIEN 3992. Co-op Grading Period 1. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. A nominal fee is charged for registration for Work Periods. No tuition is charged for Grading Periods. S/U grade assessment.

**BIEN 3993. Co-op Work Period 2. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3993, 3994 etc. Fee. SNC/UNC grade assessment.

**BIEN 3994. Co-op Grading Period 2. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. A nominal fee is charged for registration for Work Periods. No tuition is charged for Grading Periods. S/U grade assessment.

**BIEN 4220. Embedded Biomedical Instrumentation. 3 cr. hrs.**

Fundamentals of digital circuit design and analysis and the application to embedded biomedical instrumentation. Topics include microprocessor principles and programming and system design constraints for medical electronics. Laboratory will provide applications of concepts introduced in class. Prereq: BIEN 2300.

**BIEN 4230. Intelligent Biosystems. 3 cr. hrs.**

Use of emerging tools in systems biology and soft computing to explore how biosystems with highly distributed "intelligence" are designed to adapt to self- and environmentally-induced perturbations. Students obtain a basic understanding of key soft computing tools and use fuzzy expert system models. Applications to smart healthcare monitoring and future product design will be explored. Prereq: Jr. stdng. and BIEN 4700.

**BIEN 4280. Biocomputers Design Lab 1. 3 cr. hrs.**

Hands-on experience in software design and validation, microprocessors, computer architecture, real-time computing, embedded software, graphical user interface and networking. An emphasis on medical devices with embedded software and hardware. Prereq: BIEN 2300, BIEN 4220, BIEN 3300, and BIEN 3200.

**BIEN 4290. Biocomputers Design Lab 2. 3 cr. hrs.**

Continuation of BIEN 4280 with emphasis on high performance computing in workstation environments. Prereq: BIEN 4280.

**BIEN 4320. Biomedical Instrumentation Design. 3 cr. hrs.**

Problems in instrumentation relating to physiological measurements in the laboratory and clinic. Electronic devices for stimulus as well as measurement of physiological quantities. Design of actual instruments. Features include mechanical design, accessory design and safety requirements. Prereq: BIEN 2300 and BIEN 3300; or ELEN 3030 and ELEN 3020.

**BIEN 4380. Bioelectronics Design Lab 1. 3 cr. hrs.**

Understanding the principles of operation, safe operating procedures and methods of medical instrument selection. Design of experiments to measure physiological parameters. Typical experiments include: electrical safety; myography; force measurement; operational amplifier characterization; active filter; respiration monitoring. Actual medical instruments used under approximate clinical conditions. Report writing. 2 hrs. lec., 3 hrs. lab. Prereq: EECE 2015, EECE 2035, ELEN 3030.

**BIEN 4390. Bioelectronics Design Lab 2. 3 cr. hrs.**

Design of circuits used in research and clinical instrumentation. Experiments include the design, fabrication and evaluation of specific circuits. Typical projects include circuits used for: patient isolation from electrical hazard, measurement of heart rate, multiplexing and demultiplexing and analog to digital conversion. Design projects incorporating microprocessors are also included. Students required to submit reports. 2 hrs. lec., 3 hrs. lab. Prereq: BIEN 4380 and EECE 3015.

**BIEN 4400. Transport Phenomena. 3 cr. hrs.**

Applications of mass, momentum, and mechanical energy balances to biomedical fluid systems. Study of physiological phenomena with an emphasis on cardiovascular systems and blood rheology. Prereq: Jr. stdng. and PHYS 1003, or cons. of instr.

**BIEN 4410. Applied Finite Element Analysis. 3 cr. hrs.**

Introduces the finite element solution method for linear, static problems. Includes calculation of element stiffness matrices, assembly of global stiffness matrices, exposure to various finite element solution methods, and numerical integration. Emphasizes structural mechanics, and also discusses heat transfer and fluid mechanics applications in finite element analysis. Computer assignments include development of finite element code (FORTRAN or C) and also use of commercial finite element software (ANSYS and/or MARC). Prereq: Sr. stdng., BIEN 1110 and CEEN 2130; or Sr. stdng., CEEN 2130, and GEEN 1220.

**BIEN 4420. Introduction to Biomaterials Science and Engineering. 3 cr. hrs.**

This course is designed to introduce the uses of materials in the human body for the purposes of healing, correcting deformities, and restoring lost function. The science aspect of the course encompasses topics including characterization of material properties, biocompatibility, and past and current uses of materials for novel devices that are both biocompatible and functional for the life of the implanted device. Projects will allow students to focus and gain knowledge in an area of biomaterials engineering that they are interested in. Prereq: MEEN 2460 or cons. of instr.

**BIEN 4480. Biomechanics Design Lab 1. 3 cr. hrs.**

Intended for those students pursuing the Biomedical Engineering Biomechanics option. The application of principles of engineering mechanics, data acquisition and basic electronics in the design and utilization of biomechanical instrumentation. Principles of transduction, mechanics, sampling theory, strain, temperature, and flow measurement as applied to biomechanical systems. A background in data acquisition, electrical safety, operational amplifier and bridge circuits, and measurements is provided. Experiments investigate biomechanics of the musculoskeletal and cardiovascular systems and include design content. Report writing. 2 hrs. lec., 3 hrs. lab. Prereq: BIEN 2300, MEEN 2120, and CEEN 2130.

**BIEN 4490. Biomechanics Design Lab 2. 3 cr. hrs.**

Provides students with experience in the design and implementation of appropriate experimental procedures to analyze biomechanical problems. Students will become familiar with various types of advanced transducers which will be used in conjunction with data acquisition workstations to obtain thermal, flow, strain, and related physiological data from biomechanical systems. Topics include mechanical properties of active muscle; analysis of human motion; postural stability; thermal regulation; cardiovascular mechanics; stress distribution in skeletal system; and comparison of static and dynamic biomechanical responses to load. 2 hrs. lec., 3 hrs. lab. Prereq: BIEN 4480.

**BIEN 4500. Medical Imaging Physics. 3 cr. hrs.**

Students learn how light, X-rays, radiopharmaceuticals, ultrasound, magnetic fields, and other energy probes are generated and how they interact with tissues and detectors to produce useful image contrast. Practical issues such as beam generation, dose limitations, patient motion, spatial resolution and dynamic range limitations, and cost-effectiveness will be addressed. Emphasis is placed upon diagnostic radiological imaging physics, including the planar X-ray, digital subtraction angiography mammography, computed tomography, nuclear medicine, ultrasound, and magnetic resonance imaging modalities. Prereq: PHYS 1004 or PHYS 1014.

**BIEN 4510. Image Processing for the Biomedical Sciences. 3 cr. hrs.**

This course serves as an introduction to biomedical image processing. Topics explored included the human visual system, spatial sampling and digitization, image transforms, spatial filtering, Fourier analysis, image enhancement and restoration, nonlinear and adaptive filters, color image processing, geometrical operations and morphological filtering, image coding and compression image segmentation, feature extraction and object classification. Applications in diagnostic medicine, biology and biomedical research are emphasized and presented as illustrative examples. Prereq: MATH 1450 and MATH 1451 or MATH 1455; knowledge of C programming; or cons. of instr.

**BIEN 4600. Neural Engineering. 3 cr. hrs.**

Basic principles of neural engineering, properties of excitable tissues, quantitative models used to examine the mechanisms of natural and artificial stimulation. Basic concepts for the design of neuroprosthetic devices for sensory, motor and therapeutic applications. Design issues including electrode type, biomaterials, tissue response to stimulating electrodes and stimulus parameters for electrical stimulation and artificial control. Examples of how engineering interfaces with neural tissue show increasing promise in the rehabilitation of individuals of neural impairment. Prereq: PHYS 1004 or PHYS 1014.

**BIEN 4610. Introduction to Rehabilitation Robotics. 3 cr. hrs.**

Presents the fundamentals of robotics as it is applied to rehabilitation engineering. Specific topics include: the fundamentals of analysis and design of robot manipulators with examples and mini-projects taken from rehabilitation applications pertaining to robotic therapy devices and personal assistants. Additional topics include: overview of rehabilitation robotics field, human-centered design of rehabilitation robots issues and challenges, robot configurations, rigid motions and homogeneous transformations, Denavit-Hartenberg representation, robot kinematics, and inverse kinematics, Euler-Lagrange equations, trajectory generation, sensors, actuators, independent joint control, force control and safety. Prereq: Jr. stndg.

**BIEN 4620. Rehabilitation Science and Engineering. 3 cr. hrs.**

Introduces rehabilitation science as the study of tissue and functional change, including: overview of key human sensory modalities and neuromotor systems in the context of functional capabilities and human performance metrics; review of spontaneous recovery mechanisms in response to various types of tissue trauma; review of roles of genetics and gene transcription networks in pathology and functional recovery prognosis; and the concept of rehabilitative assessment and therapeutic interventions as an optimization problem. Also focuses on the use of assistive technology to enhance access to independent living and to optimize the delivery of rehabilitative healthcare services. Includes rehabilitation biomechanics of physical interfaces, use of access and usability engineering in product design and innovative assessment and intervention strategies for neurorehabilitation. Prereq: BIEN 2300 or equiv.

**BIEN 4630. Rehabilitation Engineering: Prosthetics, Orthotics, Seating and Positioning. 3 cr. hrs.**

Presents an overview of biomedical engineering as it applies to Rehabilitation Engineering, specifically, the design and prescription of prosthetic limbs, orthotic devices, and seating and positioning systems. Topics include: medical terminology, musculoskeletal anatomy, muscle mechanics, soft tissue mechanics, gait/locomotion, amputation surgery, lower extremity prosthetics, lower extremity orthotics, hand function, electromyography, upper extremity prosthetics, upper extremity orthotics, seating and positioning, and assistive devices. Prereq: MEEN 2120 or CEEN 2122.

**BIEN 4640. Bioengineering of Living Actuators. 3 cr. hrs.**

Overview of muscle tissue as a living actuator from the perspective of engineering design, systems biology, muscle modeling and adaptive control. Prereq: BIEN 4700, BIEN 3300.

**BIEN 4700. Systems Physiology. 3 cr. hrs.**

Analyses of the underlying physiologic and bioengineering aspects of the major cell and organ systems of the human from an engineer's point of view. Classic physiologic approaches used to introduce topics including cell functions, nervous system, nerve, muscle, heart, circulation, respiratory system, kidney, reproduction and biomechanics. Design problems including models of cell-organ-system function and problems in biomechanics illuminate topics covered. Computer techniques and relevant instrumentation are incorporated. Experts on related topics are invited to speak as they are available. Prereq: Jr. stndg.

**BIEN 4710. Analysis of Physiological Models. 3 cr. hrs.**

Development of continuous (compartmental), and distributed-in-space-and-time mathematical models of physiological systems and molecular events. Analytical and numerical methods for solving differential equations of the initial and boundary value types. Simulation of model response, and estimation of model parameters using linear and nonlinear regression analysis. Prereq: Jr. stndg. and MATH 2451; or jr. stndg. and MATH 2455.

**BIEN 4720. Cardiopulmonary Mechanics. 3 cr. hrs.**

Examination of the physiological behavior of the cardiovascular and pulmonary systems from an engineering perspective. Emphasis is on understanding the mechanical basis of physiologic phenomena via experimental models. Prereq: BIEN 4700, which must be taken concurrently, or equiv.; and BIEN 4400, which must be taken concurrently, or equiv.; or cons. of instr.

**BIEN 4920. Principles of Design. 3 cr. hrs.**

Course content focuses on a structured product design and development process that includes project definition, customer needs identification, product specification, concept generation, and concept selection. Course also focuses on issues related to teamwork, project management, and effective communication. Student team design projects culminate in the development of a technically and economically viable concept and a proposal for future development of this concept (done in the second semester of this two-course sequence). 2 hrs. lec., 2 hrs. lab. Prereq: Sr. stdng.; co-op students, jr. stdng. Cross-listed with COEN 4920, ELEN 4920 and MEEN 4920.

**BIEN 4931. Topics in Biomedical Engineering. 1-3 cr. hr.**

Course content announced prior to each term. Students may enroll in the course more than once because subject matter changes. Possible topics include biomechanics, experimental methods, neuroanatomy, telemetry, etc. Prereq: Jr. stdng.

**BIEN 4991. Co-op Work Period 3. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4991, 4992, etc. Fee. SNC/UNC grade assessment.

**BIEN 4992. Co-op Grading Period 3. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. A nominal fee is charged for registration for Work Periods. No tuition is charged for Grading Periods. S/U grade assessment.

**BIEN 4993. Co-op Work Period 4. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4993, 4994, etc. Fee. SNC/UNC grade assessment.

**BIEN 4994. Co-op Grading Period 4. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. A nominal fee is charged for registration for Work Periods. No tuition is charged for Grading Periods. S/U grade assessment.

**BIEN 4995. Independent Study in Biomedical Engineering. 1-4 cr. hr.**

Undergraduate independent study project of either a theoretical or experimental nature. Prereq: Jr. stdng., 3.000 GPA, cons. of instr., and cons. of dept. ch.; or sr. stdng., 3.000 GPA, cons. of instr., and cons. of dept. ch.

**BIEN 4998. Senior Design Project. 3 cr. hrs.**

Course focuses on detailed design, prototyping, and testing design concepts. Course includes topics directly relevant to student design projects and careers in the engineering profession. Student team design projects culminate in a final report that documents the performance and details (engineering drawings and/or documentation) of their final design. 2 hrs. lec., 2 hrs. lab. Prereq: BIEN 4920. Cross-listed with COEN 4998, ELEN 4998 and MEEN 4998.

## Civil Environmental Engineer

### CEEN 2110. Statics. 3 cr. hrs.

Fundamentals of forces and force systems. Internal and external forces. Support reactions. Definition of a free-body diagram (FBD). Emphasis on development of FBD-drawing skills. Moment of a force. Force system resultants. Vector methods in two and three dimensions. Equilibrium analysis of particles and rigid bodies. Truss analysis by methods of joints and sections. Analysis of simple frames and machines. Analysis of friction. Centroids of composite areas and volumes. Resultants of distributed loads. Prereq: MATH 1451 or MATH 1455, which may be taken concurrently. Same as MEEN 2110.

### CEEN 2120. Dynamics. 3 cr. hrs.

Fundamentals of motion of particles and rigid bodies. Application of Newton's laws. Principles of position, velocity, and acceleration. Use of work-energy and impulse-momentum methods. Introduction to vibrations. Prereq: CEEN 2110 or MEEN 2110. Same as MEEN 2120.

### CEEN 2122. Statics and Dynamics. 4 cr. hrs.

Fundamentals of forces, force systems and their application to static and dynamic bodies and systems of particles emphasizing vector methods in two and three dimensions. Equations of equilibrium. Friction, applications of Newton's laws, energy and momentum methods. Prereq: MATH 1451 or MATH 1455, which may be taken concurrently. Same as MEEN 2122.

### CEEN 2130. Mechanics of Materials. 3 cr. hrs.

Concepts of stress, strain and deflection. Factor of safety. Mechanical properties of materials. Stress and deformation calculations for cases of axially loaded rods, torsion of circular shafts, beam bending and combined loading. Horizontal shear connectors in built-up beams. Area moment of inertia. Parallel-axis theorem. Introduction to beam design. Stress concentration. Stress transformation and principal stress calculation by Mohr's circle. Statically indeterminate analysis. Elastic buckling of columns. Prereq: CEEN 2110 or MEEN 2110. Same as MEEN 2130.

### CEEN 2310. Elementary Surveying. 3 cr. hrs.

Fundamental concepts and theory of engineering measurements; adjustment and use of instruments; computations; errors; measurement of distance, difference in elevation, angles and directions; route surveying, construction surveys. Probability concepts and statistical analysis of field data. 2 hrs. lec., 3 hrs. lab.

### CEEN 3150. Mechanics of Fluids. 3 cr. hrs.

Fundamental conservation laws of mass, momentum, and energy. Properties of fluids, hydrostatics, flow of real fluids in closed and open systems, dynamic similarity, dimensional analysis, compressible flow, and potential fluid flow. Same as MEEN 3320.

### CEEN 3160. Geotechnical Engineering. 3 cr. hrs.

Fundamental properties and engineering characteristics of soil as a particulate mass aggregate are studied. The formation and the development of soil deposits, the physical and hydraulic properties and the methods of predicting the stress-strain behavior of soils for engineering applications are examined. Laboratory experiments are conducted and reports are required. 2 hrs. lec., 1.25 hrs. lab. Prereq: Jr. stndg.

### CEEN 3170. Introduction to Geology. 3 cr. hrs.

Covers the nature and properties of the materials which make up the earth, the process by which they are formed and the distribution of these materials throughout the earth. Examines the processes of volcanism, glaciation, stream erosion and weathering and studies how earth's materials are formed, altered transported and deformed.

### CEEN 3210. Hydraulic Engineering. 3 cr. hrs.

Fundamentals and applications of hydrostatics and hydrodynamics including pressurized pipe flow and pipeline network design, open channel flow, and sewer design, pump selection and flow measurement. Laboratory assignments and demonstrations. 2 hrs. lec., 2 hrs. lab. Prereq: CEEN 3150 or MEEN 3320.

**CEEN 3220. River Engineering. 3 cr. hrs.**

Basic principles of open-channel hydraulics, flow resistance, gradually-varied flow, rapidly-varied flow, hydrologic and hydraulic flood routing, and river restoration/ naturalization. Prereq: CEEN 3210.

**CEEN 3320. Civil Engineering Materials. 3 cr. hrs.**

Introduction to the properties and fundamental behavior materials used by civil engineers with emphasis on concrete, asphalt and steel. Lab experiments are used to demonstrate the behavior of materials subjected to various load levels and orientations. Use of spreadsheets and statistical analysis of experimental data are required. 2 hrs. lec; 1.25 hrs. lab. Prereq: Soph. stndg.

**CEEN 3410. Structural Analysis. 3 cr. hrs.**

Determining the loads that act on structures and load combinations. Basic concepts in structural analysis of determinate beams, trusses, and frames. Deflections of determinate beams by moment area and conjugate beam methods. Development of basic virtual work concept to obtain deformations in determinate trusses, beams, and frames. Introduction to the solution of indeterminate structures by using the method of superposition. Influence lines for determinate beams. Prereq: CEEN 2130 or MEEN 2130.

**CEEN 3430. Steel Design 1. 3 cr. hrs.**

Interpretation of current codes as related to the physical behavior of steel structures. Design of structural steel members: tension, compression, flexural and beam-columns. Introduction to design of connections. Prereq: CEEN 3410.

**CEEN 3440. Reinforced Concrete Design. 3 cr. hrs.**

Fundamental concepts of reinforced concrete theory and design. Use of current design code for the analysis and design of basic structural members; strength design for flexure, shear and development of reinforcement. Prereq: CEEN 3410.

**CEEN 3510. Environmental Engineering. 3 cr. hrs.**

Introduction to environmental engineering with a focus on the water environment. Topics include water quality, water resources, water supply, municipal water and wastewater systems, air quality, and solid and hazardous waste management. Prereq: Jr. stndg.

**CEEN 3610. Transportation Engineering. 3 cr. hrs.**

Emphasis on forecasting methodologies -- applications to transportation. Use of spreadsheets for simple and multiple linear regression, statistical charts. Airport airside systems based on FAA guidelines. Road user and vehicle characteristics, geometric design of roadways including horizontal and vertical alignment and cross-sectional elements. Signalized intersections. Emphasis on technical-report writing. Prereq: Jr. stndg.

**CEEN 3615. Highway Planning and Design. 3 cr. hrs.**

Emphasis on highway planning, alternate highway alignments and alternate evaluation, Also geometric design of highways including horizontal and vertical alignment, cross-section design. Projects on detailed design of reverse curves (plan and profile views); intersection design; cross-section and earthwork quantities. Legal aspects of engineering. Use of American Association of State Highway and Transportation Officials design guidelines. 2 hrs. lec., 2 hrs. lab. Prereq: CEEN 3610 or cons. of instr.

**CEEN 3620. Highway Interchange Design. 3 cr. hrs.**

Planning, analysis, design and operational analysis of highway interchanges. Determination and adaptability of interchange types for freeway to freeway and service interchanges. Offered alternate fall terms. Prereq: CEEN 3610.

**CEEN 3625. Urban Street Design. 3 cr. hrs.**

Planning consideration, highway system components, design elements, including horizontal and vertical alignment, cross section elements, sight distance, intersections, parking, one way streets, mass transit and bicycle considerations. Prereq: CEEN 3610.

**CEEN 3630. Airport Planning and Design. 3 cr. hrs.**

Introduction to airport planning and design parameters, aircraft characteristics, payload versus range, runway length requirements, air traffic control, wind analysis, airside capacity and delay, airside separation criteria, terminal analysis and delay, airport access flow and capacity, ramp charts. Economic analysis of facility improvements. Prereq: CEEN 3610 or cons. of instr. This course is a design elective.

**CEEN 3640. Traffic Characteristics and Design. 3 cr. hrs.**

Components of the traffic system: vehicle and road user characteristics, geometric design and traffic controls. Intersection types, cross-section design elements and typical dimensions. Basic variables of traffic flow, observed traffic flow values. Freeway operations. Signalized intersections: flow, capacity, level of service. Projects addressing: intersection existing conditions (traffic, geometry, signalization); approach delay; safety performance; capacity; suggestions for improvements. Use of the Highway Capacity Manual and the Highway Capacity Software. Emphasis on technical report-writing and presentation. Prereq: CEEN 3610 or cons. of instr.

**CEEN 3645. Traffic Engineering. 3 cr. hrs.**

Design, analysis and use of traffic control devices. Traffic administration, traffic flow theory, and highway capacity. An introduction to computer and traffic engineering. Prereq: CEEN 3640 or cons. of instr.

**CEEN 3720. Decent and Affordable Housing. 3 cr. hrs.**

Through helping to construct a Habitat for Humanity house; through listening to and debating with guest lecturers who are helping to build housing units for low income people; and through reading and discussing books, articles, and other selected documents that focus on the problems of the central cities, the students will learn that decent and affordable housing is an issue of social justice and it can become a reality wherever there is a will to make it happen.

**CEEN 3730. Engineers and Technology Through History. 3 cr. hrs.**

The history, including individuals and tradition, that have contributed to the development and growth of technology and engineering in the United States. Topics include: ancient and medieval engineering, early U.S. engineers, the Industrial Revolution, railroads and engineers, transportation, urban growth, and engineers of the 20th century.

**CEEN 3991. Co-op Work Period 1. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3991, 3992, etc. Fee. SNC/UNC grade assessment.

**CEEN 3992. Co-op Grading Period 1. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U grade assessment.

**CEEN 3993. Co-op Work Period 2. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3993, 3994 etc. Fee. SNC/UNC grade assessment.

**CEEN 3994. Co-op Grading Period 2. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U grade assessment.



**CEEN 4145. Advanced Strength and Applied Stress Analysis. 3 cr. hrs.**

Basic concepts of mechanics of deformable bodies. Two- and three-dimensional stress-strain relationships and theories of failure. Unsymmetrical bending analyses. Shear flow and shear center. Torsion of thin-walled sections (tubular and non-tubular). Composite beams. Stress concentration. Energy principles: strain and complementary energy. Castigliano's theorem. Prereq: CEEN 2130 or MEEN 2130.

**CEEN 4230. Urban Hydrology and Stormwater Management. 3 cr. hrs.**

Distribution and properties of waters on the earth. Concept of the hydrologic cycle, and basic principles of meteorology, precipitation, streamflow, evapotranspiration, and groundwater flow. Erosion and urban stormwater pollution. Design of urban flood protection and stormwater pollution abatement systems. Prereq: CEEN 3150, or MEEN 3320.

**CEEN 4240. Water Resources Engineering. 3 cr. hrs.**

Surface waters, groundwater yields, probability concept in water resources design, water laws, reservoirs and dams, open channels and flow regulation, irrigation and drainage, flood damage mitigation, hydroelectric power, water resources economy and planning. Prereq: CEEN 3210.

**CEEN 4250. Groundwater Engineering. 3 cr. hrs.**

Physical and chemical properties and principles of groundwater. Groundwater geology and interaction with the hydrologic cycle. Groundwater movement and flow nets. Groundwater contamination. Prereq: CEEN 3210 and CEEN 3510.

**CEEN 4310. Geographical Information Systems in Engineering and Planning. 3 cr. hrs.**

Topics covered include: fundamentals of GIS, databases, data management, map projections, representations of spatial attributes, GIS analysis and GIS software systems such as ARC Info, ARC View, Grass. GIS use and expanded capabilities will be taught. Case studies including environmental, transportation and economic applications will be discussed. Prereq: Sr. stdng.

**CEEN 4320. Engineering Decisions Under Uncertainty. 3 cr. hrs.**

Application of probability and statistics to modeling, analysis and design of civil engineering systems. Topics include: probability theory, decision theory, utility theory, and simulation. Prereq: Sr. stdng.

**CEEN 4340. Urban Planning for Civil Engineers. 3 cr. hrs.**

Concepts and principles underlying urban planning and development. Land use, transportation, utility, community facility planning problems, procedures, and techniques. The master plan and implementation devices such as zoning, subdivision control, official mapping, capital budgeting, and urban renewal.

**CEEN 4350. Law for Engineers. 3 cr. hrs.**

Basic legal principles and awareness of typical legal questions that arise when engineers and law interact. Topics include: American judicial system, law of contracts, forms of association, construction contracts, professional liabilities of engineers, and torts. Prereq: Sr. stdng. or cons. of instr.

**CEEN 4411. Matrix Structural Analysis. 3 cr. hrs.**

Introduction to symbolic and numerical linear algebra computations using commercial software. Modeling axial, bending, and torsion deformations in structural members using polynomials. Application of the principle of virtual work to compute deflections for statically determinate and indeterminate problems. Formulation of the matrix stiffness method via the principle of virtual displacements and the matrix flexibility method via the principle of virtual forces. Application of the matrix stiffness method for solving statically indeterminate structural analysis problems. Use of approximate methods of structural analysis (cantilever and portal methods) for critical evaluation of software-generated solutions. Use of commercial software for structural analysis. Prereq: CEEN 3410.

**CEEN 4431. Steel Design 2. 3 cr. hrs.**

Continuation of CEEN 3430. Design of steel beam-columns, continuous beams, composite beams and composite columns. Design of bolted and welded joints, connections, and sub-assemblages. Design of steel building structures. Prereq: CEEN 3430.

**CEEN 4441. Advanced Concrete and Masonry Design. 3 cr. hrs.**

Continuation of CEEN 3440, presenting advanced concrete theory and design and introduction to masonry design. Emphasis on ACI code requirements. Design of reinforced concrete statically indeterminate systems, two-slabs and columns. Prereq: CEEN 3440.

**CEEN 4442. Prestressed Concrete Design. 3 cr. hrs.**

Introduction to the philosophy and concepts of prestressed concrete design. Study of the historical background, materials and methods of prestressing. Use of current code and basic principles and procedures for the design and analysis of pretensioned and post-tensioned members including calculation of loss of prestress, flexural analysis and design, shear, bond and anchorage requirements, member deflections and cable layouts. Prereq: CEEN 3440.

**CEEN 4450. Bridge Design. 3 cr. hrs.**

Introduction to bridge engineering and construction including: an abbreviated history of bridge construction; bridge types; bridge nomenclature; lessons from failures; design philosophies; and the construction process. Analysis of single-and multi-span bridge superstructures using classical techniques and commercial software. Design of single-span reinforced concrete slab bridges; reinforced concrete bridge decks; and single-span slab-bridges in prestressed concrete. Prereq: CEEN 3430 and CEEN 3440.

**CEEN 4460. Foundation Engineering. 3 cr. hrs.**

Design of earth retention systems, earthen dams, shallow and deep foundation members subjected to vertical and eccentric loadings. The effects of solid origin and deposition are analyzed in relation to bearing and capacity and settlement of structures. Prereq: CEEN 3160.

**CEEN 4515. Environmental Chemistry. 3 cr. hrs.**

Chemical stoichiometry, equilibrium, and kinetics relating to natural and engineered environmental systems. Basic concepts from organic and inorganic chemistry including oxidation-reduction reactions, acid-base chemistry, the carbonate system, alkalinity, and acidity. Equilibrium and kinetic theories of chemical partitioning among gas, liquid and solid phases governing chemical fate and transport in the environment. Coordination chemistry describing metal-ligand interactions, precipitation, and bioavailability of materials. Prereq: Sr. standg. and CHEM 1002.

**CEEN 4520. Industrial Wastewater Management. 3 cr. hrs.**

Review of federal legislation and state regulations with regard to industrial wastewater management practices. Consideration of industrial process modifications and wastewater treatment options with respect to their effect on industrial user fees. Pretreatment standards and discharge permit requirements. Case studies of specific industrial applications. Prereq: CEEN 3510.

**CEEN 4525. Treatment Plant Design and Operation. 3 cr. hrs.**

Review of water and wastewater characteristics, drinking water, receiving water and effluent standards. Basic design methodology and operational features of common physical, chemical and biological processes for the treatment of waters and wastewaters. Introduction to the processing and disposal of sludges and other treatment plant residuals. Prereq: CEEN 3510.

**CEEN 4530. Hazardous and Industrial Waste Management. 3 cr. hrs.**

Overview of hazardous waste management, disposal and soil and ground water remediation. Review of RCRA, CERCLA-SARA, TSCA and Wisconsin's NR 700 and other regulations. Definition of hazardous wastes and characterization of industrial waste stream. Chemical, physical and biological properties of hazardous wastes. Introduction to hazardous waste remediation/treatment methods and technologies. Landfills and the RCRA Land Ban regulations. Site assessments, field investigations and laboratory analytical techniques. Environmental risk assessments, cleanup objectives and waste minimization. Prereq: Sr. stndg. or cons. of instr.

**CEEN 4535. Environmental Engineering Microbiology. 3 cr. hrs.**

Includes microbiological and biochemical properties of microorganisms important in environmental engineering practice. General fundamentals of environmental microbiology and their application to drinking water treatment and distribution, water pollution control, and natural systems. Prereq: CEEN 3510 or cons. of instr.

**CEEN 4540. Municipal Solid Waste Management. 3 cr. hrs.**

Introduction to municipal solid waste management and hazardous wastes associated with municipal solid wastes. Emphasizes the relationship between the properties of wastes, the techniques and hardware used for waste handling and processing and the ultimate disposal (containment) of waste and other residual materials. Covers remediation of orphaned landfills. Examines the design of systems for the management and disposal of solid and hazardous wastes subject to economic factors, safety, reliability and ethical and social implications. Prereq: CEEN 3510.

**CEEN 4545. Air Pollution Engineering. 3 cr. hrs.**

Topics covered include: public health aspects of air pollution, stationary and traffic sources, chemistry of air pollutants and aerosols, air pollution meteorology, dispersion modeling, regulations and criteria regarding pollution emissions and pollution control engineering. Prereq: Jr. stndg.

**CEEN 4650. Pavement Design. 3 cr. hrs.**

Study of the behavior and properties of highway pavements with emphasis on hot mix asphalt and jointed Portland cement concrete pavement. Pavement thickness designs are developed using current design methods and incorporating subgrade soil properties, traffic forecasts and pavement performance expectations. Use of spreadsheets and computer programs are required. Prereq: CEEN 3160 and CEEN 3610.

**CEEN 4660. Pavement Management. 3 cr. hrs.**

Study of the performance of pavement systems based on design, traffic and maintenance activities. Methods for evaluating in-service pavements including distress surveys and nondestructive testing are examined. Maintenance strategies are developed and life-cycle cost analysis of these strategies are studied. Prereq: CEEN 3610.

**CEEN 4670. Advanced Transportation Materials. 3 cr. hrs.**

Advanced study of materials used for constructing transportation facilities, with particular emphasis on subgrade soils, bound and unbound aggregates, hot mix asphalt and Portland cement concrete. Laboratory test are conducted and analytical models used for characterizing transportation materials are examined. Prereq: CEEN 3320 and CEEN 3160.

**CEEN 4710. Engineering Fundamentals Review. 1 cr. hr.**

Review of basic science, mathematics, engineering science and economics. S/U grade assessment. Prereq: Sr. stndg. Same as MEEN 4590.

**CEEN 4715. Sustainable Engineering. 3 cr. hrs.**

Overview of sustainable engineering principles including environmental, economic and social equity issues. Tools, such as mass and energy balances and life cycle assessment will be covered. Other topics include global warming, green house gases, green engineering, clean manufacturing, and sustainable management of energy and natural resources. Prereq: CEEN 3510 or cons. of instr.

**CEEN 4740. Health, Environment, and Infrastructure in Latin America. 3 cr. hrs.**

Students will explore the relationship between Latin American culture and engineering infrastructure. Emphasis is placed on alleviation of poverty and international development. Students will become familiar with (1) Latin American culture, history, and politics, (2) peace and justice issues, (3) water treatment, wastewater treatment, and environmental protection (4) engineering infrastructure, and (5) health care issues. The needs of developing countries and the advantages and disadvantages of highly developed infrastructure systems will be highlighted. Students are asked to reflect on the importance of engineering works in light of lecture and reading viewpoints, with the goal of gaining a richer understanding of the implications of culture within infrastructure development. The course will culminate in each student writing a paper combining information gained through reading, lecture, and service learning to emphasize a course-related topic. Participation in an international or domestic service learning project is required. A variety of projects will be made available by the instructor.

**CEEN 4931. Topics in Civil Engineering. 1-3 cr. hr.**

Course content announced each term. Prereq: Cons. of instr.

**CEEN 4953. Environmental Seminar. 0 cr. hrs.**

Topics related to environmental engineering, including subjects such as air pollution, urban hydrology and stormwater management, wastewater treatment and hazardous waste management. SNC/UNC grade assessment.

**CEEN 4991. Co-op Work Period 3. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4991, 4992, etc. Fee. SNC/UNC grade assessment.

**CEEN 4992. Co-op Grading Period 3. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U grade assessment.

**CEEN 4993. Co-op Work Period 4. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4993, 4994 etc. Fee. SNC/UNC grade assessment.

**CEEN 4994. Co-op Grading Period 4. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U grade assessment.

**CEEN 4995. Independent Study in Civil and Environmental Engineering. 1-3 cr. hr.**

Undergraduate independent study project of either a theoretical or experimental nature. Prereq: Jr. stndg., 3.000 GPA, cons. of instr., and cons. of dept. ch.

**CEEN 4997. Civil Engineering Capstone Design. 4 cr. hrs.**

Design of selected civil engineering projects including planning, preliminary analysis and final design. Different projects are selected each year. Students are assigned to project teams with specific tasks under the direction of a faculty course coordinator. Professional engineers from local firms propose projects and act as consultants to each design team. Emphasis is placed on student initiative, responsibility and resourcefulness in an open-ended project. A final written design report and oral presentation are required for each design team. Emphasis on technical communications, professional ethics and engineering practices. 3 hrs. lec., 3 hrs. lab. Prereq: CEEN 3430 or CEEN 3440.

## **Construct Engineer Mgmnt**

### **CEMA 3810. Introduction to Construction Management. 3 cr. hrs.**

Construction contracts, contract bonds, construction funding, cash flow analysis, labor productivity and cost. Analytical techniques for project planning and scheduling. Construction safety. Prereq: Soph. stdng for CEMA major., Jr. stdng. of other majors, or cons. of instr.

### **CEMA 3850. Construction Equipment and Methods. 3 cr. hrs.**

Construction equipment and productivity analysis. Design of equipment fleet operations. Design of temporary structures used during construction such as earth retaining structures and concrete formwork systems. Construction equipment safety and safety standards related to earthwork and concrete forming operations. Prereq: CEMA 3810.

### **CEMA 3860. Construction Materials and Methods. 3 cr. hrs.**

Introduction to materials and methods of building construction and to construction drawings. Foundation, structural framing, floor, room and wall systems. Blueprint reading and quantity takeoff techniques. An introduction to building information modeling. Prereq: CEMA 3810.

### **CEMA 3991. Co-op Work Period 1. 0 cr. hrs.**

Registration for approved cooperative program work assignments is required for all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3991, 3992. SNC/UNC grade assessment.

### **CEMA 3992. Co-op Grading Period 1. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U Grade Assessment.

### **CEMA 3993. Co-op Work Period 2. 0 cr. hrs.**

Registration for approved cooperative program work assignments is required for all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3993, 3994. SNC/UNC grade assessment.

### **CEMA 3994. Co-op Grading Period 2. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U Grade Assessment.

### **CEMA 4815. Mechanical and Electrical Systems for Buildings. 3 cr. hrs.**

Provides basic knowledge of electrical, plumbing and HVAC systems used in residential, commercial and industrial buildings. Studies the advantages and disadvantages of various systems, and how their design and installation integrates into the management of the building process. Particular attention is given to soliciting and managing mechanical and electrical subcontractors. Prereq: CEMA 3810.

### **CEMA 4820. Construction Operations and Productivity. 3 cr. hrs.**

Study of construction operations with emphasis on productivity measurement and enhancement. Application of an integrated approach to planning, analysis and design of construction operations. Application of simulation models and other analytical tools for modeling construction operations. Study of productivity improvement strategies, including lean construction principles. Prereq: Senior standing.

### **CEMA 4825. E-Business in the Construction Industry. 3 cr. hrs.**

Explores the ways in which information technology and its Internet components help to provide competitive advantage for construction companies. Selection/implementation of Web-based project management tools. An investigation of digital technologies in construction industry. Wire/wireless communication, online plan/bid rooms, mobile computing, and video conferencing. Prereq: Senior standing.

**CEMA 4830. Construction Planning, Scheduling, and Control. 3 cr. hrs.**

A study of principles and techniques used to plan, schedule and control costs on building construction projects. Network and linear scheduling models, resource allocation and time-cost analysis. Develops an appreciation of the resources required in a project and their limitations and introduces the techniques for analyzing and improving their use. Develops an understanding of the correlation between project planning and control and cost estimating and scheduling. Prereq: CEMA 3860.

**CEMA 4840. Construction Cost Analysis and Estimating. 3 cr. hrs.**

Study of various cost estimating methods and their applications. Topics include: labor, material, equipment and indirect costs; quantity takeoff; analysis of historical cost data; forecasting and computerized estimating methods. Prereq: CEMA 3850.

**CEMA 4931. Topics in Construction Engineering and Management. 1-3 cr. hr.**

Course content announced each term. Prereq: Cons. of instr.

**CEMA 4991. Co-op Work Period 3. 0 cr. hrs.**

Registration for approved cooperative program work assignments is required for all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4991, 4992. SNC/UNC grade assessment.

**CEMA 4992. Co-op Grading Period 3. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U Grade Assessment.

**CEMA 4993. Co-op Work Period 4. 0 cr. hrs.**

Registration for approved cooperative program work assignments is required for all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4993, 4994. SNC/UNC grade assessment.

**CEMA 4994. Co-op Grading Period 4. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U Grade Assessment.

## Computer Engineering

**COEN 2020. Electric Circuits 2. 3 cr. hrs.**

Sinusoidal steady-state analysis. Power in AC circuits. Linear and ideal transformers. Laplace transform methods and circuit analysis applications. Passive and active frequency-selective circuits. Fourier methods. Overview of discrete-time analysis. Prereq: EECE 2010 with minimum grade of C.

**COEN 2610. Software Methodologies. 3 cr. hrs.**

The first course in software engineering, covering the software life cycle, proper selection of data structures and algorithms, and the availability and choice of programming paradigms for appropriate design and implementation of well-engineered software. An open laboratory and significant programming experiences form an integral part of this course. Prereq: EECE 1610 or COSC 1010.

**COEN 3991. Co-Op Work Period 1. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3991, 3992, etc. Fee. SNC/UNC grade assessment.

**COEN 3992. Co-Op Grading Period 1. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of employer evaluation forms, work exit reports, and other materials as required during each term in school following a work period. No tuition is charged for grading periods. S/U grade assessment.

**COEN 3993. Co-Op Work Period 2. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3993, 3994, etc. Fee. SNC/UNC grade assessment.

**COEN 3994. Co-Op Grading Period 2. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of employer evaluation forms, work exit reports, and other materials as required during each term in school following a work period. No tuition is charged for grading periods. S/U grade assessment.

**COEN 4610. Object-Oriented Software Engineering. 3 cr. hrs.**

Presents advanced software engineering concepts in the context of object-oriented analysis and design. Topics include: concept of object-orientation, UML modeling techniques, use of CASE tools, use-case requirement analysis, modeling with classes, object-oriented design, design patterns, software quality, testing and correctness, software reuse and aspect-oriented software engineering. Prereq: COEN 2610.

**COEN 4620. Modern Programming Practices. 3 cr. hrs.**

Explores advanced topics in computer programming. Topics may include: design patterns, advanced graphical components, software component models such as Java Beans, the Java Security model, Java and databases, servlets, Java Server Pages, and Enterprise Java Beans. COEN design elective in the areas of applications and software. Prereq: COSC 2100 or COSC 2010.

**COEN 4630. Software Testing. 3 cr. hrs.**

Examines the relationship of software testing to quality, emphasizing testing techniques and the role of testing in the validation of system requirements. Topics include: module and unit testing, integration, walkthroughs and inspections, verification and validation, preventing and detecting errors, selecting and implementing project metrics, and defining test plans and strategies traced from system requirements. COEN design elective in the areas of applications and software. Prereq: EECE 2710, COSC 2100, COSC 2010, or equivalent experience.

**COEN 4650. Introduction to Algorithms. 3 cr. hrs.**

Introduction to the algorithms analysis. Topics to be covered include: the concepts of time and space complexity, advanced data structures, general issues in problem solving methodologies, greedy algorithms, dynamic programming, graph algorithms, AI-related algorithms, and an introduction to NP-completeness theory. Design elective in the area of intelligent systems. Prereq: COSC 2010.

**COEN 4690. Developments in Computer Software. 3 cr. hrs.**

Course content is announced prior to each semester. Students may enroll in the course more than once because subject matter changes. COEN design elective. Prereq: Cons. of instr.

**COEN 4710. Computer Hardware. 3 cr. hrs.**

Overview of computer system design. Cost and performance specification. Design of arithmetic and logic units. Fundamentals of central processor architecture and a comparative study of computer instruction set architectures. Detailed study of microprocessors, including instruction execution timing and other timing considerations. Discussions of memory and I/O devices, including the interfaces to the CPU and I/O transfer techniques. Study of common bus standards. Design elective for Electrical and Electronics major. Prereq: EECE 2710 with minimum grade of C and EECE 2030 with minimum grade of C; or COSC 2200 with minimum grade of C and EECE 2030 with minimum grade of C.

**COEN 4720. Embedded Systems Design. 3 cr. hrs.**

This course introduces students to embedded systems, the types of hardware that can support such systems, and the interfacing used in embedded systems. The course is a combined laboratory and lecture course, which directly applies the embedded systems techniques using hardware description and assembly languages to field programmable gate array technology. Design elective for Electrical and Computer Engineering majors. Prereq: COEN 4710 and EECE 3015.

**COEN 4730. Computer Architecture. 3 cr. hrs.**

Review of basic computer architecture. Evaluation of architecture performance. Design and evaluation of instruction sets. Pipeline processors and instruction scheduling. Vector processors. Memory hierarchy and design including cache, main and virtual memories. Memory protection schemes. Input/output and its relation to system performance. COEN design elective in the area of hardware. Prereq: Sr. stdng., 3.000 GPA, and COEN 4710; or cons. of instr.

**COEN 4790. Developments in Computer Hardware. 3 cr. hrs.**

Course content is announced prior to each semester. Students may enroll in the course more than once because subject matter changes. COEN design elective. Prereq: Cons. of instr.

**COEN 4810. Database Applications. 3 cr. hrs.**

Presents the design and application of databases. Topics include: models for databases, database query languages, database design methods, methods for storing and retrieving information from a database, database optimizations, transaction processing, and a brief examination of some advanced concepts, including object databases, distributed databases and database security. COEN design elective in the area of applications. Prereq: COSC 2100 or COSC 2010 or equiv.

**COEN 4820. Operating Systems and Networking. 3 cr. hrs.**

Introduces the fundamental concepts of operating systems together with the basics of networking and communications including: memory management, scheduling, concurrent processing, device management, file systems, networking, security, and system performance. Examples are drawn from legacy and modern operating systems. Design elective for Electrical and Computer Engineering majors. Prereq: COSC 2100 or COSC 2010.

**COEN 4830. Introduction to Computer Graphics. 3 cr. hrs.**

Introduction to computer graphics algorithm design and implementation; includes considerable actual computer graphics experience. Topics include: point-plotting and line-drawing techniques, two-dimensional curve fitting, two-and three-dimensional graphics, clipping, windowing, hidden line removal, modeling, input-output devices, and other topics as future trends dictate. COEN design elective in the area of applications. Prereq: Proficiency in at least one high level computing language.

**COEN 4840. Computer Security. 3 cr. hrs.**

Introduction to the important issues in computer security, including cryptography, program security, operating system security, database security, and network security. Also discusses the legal, ethical and privacy issues that arise in computer security. Programming projects enable the student to practice implementing many of the security measures discussed in class. COEN design elective in the areas of software, intelligent systems and applications. Prereq: COSC 2100 or COSC 2010 or equiv.

**COEN 4850. Introduction to Intelligent Systems. 3 cr. hrs.**

Provides a broad exposure to intelligent systems, including related fields such as artificial and computational intelligence. Topics include: intelligent agents, search, game playing, propositional logic and first-order predicate calculus, uncertainty, learning, communication and perception, and philosophical foundations of intelligent systems. Prereq: COSC 2010, MATH 1450 and MATH 2105.



**COEN 4860. Introduction to Neural Networks and Fuzzy Systems. 3 cr. hrs.**

Concepts of artificial neural network architectures and training algorithms, supervised and unsupervised learning, linear and non-linear neural networks, feedback neural networks, applications in scientific and engineering areas, fundamentals of fuzzy sets and fuzzy logic, fuzzy rules and inference systems, fuzzy pattern classification and clustering analysis and fuzzy control systems. Prereq: COSC 2010 and MATH 1451.

**COEN 4870. Evolutionary Computation. 3 cr. hrs.**

Covers a set of search methods based on the Darwinian principle of survival of the fittest. The methods include genetic algorithms, evolutionary strategies and evolutionary and genetic programming, which have been successfully applied to many different problem domains including optimization, learning, control, and scheduling. Provides students with the background and knowledge to implement various evolutionary computation algorithms, discusses trade-offs between different evolutionary algorithms and other search methods, and discusses issues related to the application and performance evaluation of evolutionary algorithms. Prereq: COSC 2010, MATH 1450 and MATH 2105.

**COEN 4890. Developments in Computer Applications. 1-3 cr. hr.**

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include advanced hardware (MPP, EPIC, VLIW), advanced software (enterprise systems, embedded software, real-time software) and advanced intelligent systems. Prereq: Cons. of instr. or Sr. stdng.

**COEN 4920. Principles of Design. 3 cr. hrs.**

Course content focuses on a structured product design and development process that includes project definition, customer needs identification, product specification, concept generation, and concept selection. Course also focuses on issues related to teamwork, project management, and effective communication. Student team design projects culminate in the development of a technically and economically viable concept and a proposal for future development of this concept (done in the second semester of this two-course sequence). 2 hrs. lec., 2 hrs. lab. Prereq: Sr. stdng.; Co-op students, Jr. stdng. Cross-listed with BIEN 4920, ELEN 4920 and MEEN 4920.

**COEN 4991. Co-Op Work Period 3. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4991, 4992, etc. Fee. SNC/UNC grade assessment.

**COEN 4992. Co-Op Grading Period 3. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of employer evaluation forms, work exit reports, and other materials as required during each term in school following a work period. No tuition is charged for grading periods. S/U grade assessment.

**COEN 4993. Co-Op Work Period 4. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4993, 4994, etc. Fee. SNC/UNC grade assessment.

**COEN 4994. Co-Op Grading Period 4. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of employer evaluation forms, work exit reports, and other materials as required during each term in school following a work period. No tuition is charged for grading periods. S/U grade assessment.

**COEN 4995. Independent Study in Computer Engineering. 1-4 cr. hr.**

Undergraduate independent study project of either a theoretical or experimental nature. Prereq: Jr. stdng., 3.000 GPA, cons. of instr., and cons. of dept. ch.; or Sr. stdng., 3.000 GPA, cons. of instr., and cons. of dept. ch.

**COEN 4998. Senior Design Project. 3 cr. hrs.**

Course focuses on detailed design, prototyping, and testing design concepts. Course includes topics directly relevant to student design projects and careers in the engineering profession. Student team design projects culminate in a final report that documents the performance and details (engineering drawings and/or documentation) of their final design. 2 hrs. lec., 2 hrs. lab. Prereq: COEN 4920; Cross-listed with BIEN 4998, ELEN 4998 and MEEN 4998.

**Electrical Computer Engineer****EECE 1610. Introduction to Computer Programming. 3 cr. hrs.**

Students will be introduced to computer programming with an emphasis on object-oriented programming (OOP) and OOP design methodologies. The students will learn about typical programming constructs including data types, data structures, control structures, data input and output techniques as well as several algorithms used for solving engineering problems. In addition, students will learn to use modern programming tools in an integrated development environment by focusing on developing software solutions to significant engineering problems.

**EECE 1953. Freshman Seminar 1. 1 cr. hr.**

Introduction to electrical engineering and computer engineering through presentations by faculty, graduate students, upper-class undergraduate students, alumni, and industry representatives. A formal opportunity for first-year COEN, ELCE, and ELEE students to interact with their peers and other members of the EECE Department.

**EECE 1954. Freshman Seminar 2. 1 cr. hr.**

Continuation of EECE 1953. COEN, ELCE, and ELEE students will have further opportunities to investigate electrical engineering and computer engineering applications through presentations by faculty, graduate students, upper-class undergraduate students, alumni, and industry representatives.

**EECE 2010. Electric Circuits 1. 3 cr. hrs.**

Ohm's law and Kirchhoff's laws. Mesh and loop analysis of resistive circuits with DC sources. Source transformations. Thevenin's and Norton's theorems. Natural and step response of first- and second-order circuits. Circuits with ideal op amps. Prereq: MATH 1451 or MATH 1455, which may be taken concurrently.

**EECE 2015. Circuits Laboratory 1. 1 cr. hr.**

Introduction to circuit design, construction, and test. The basics of circuit construction techniques and electronic test measurement skills are covered. Circuit components such as resistors, inductors, capacitors and op-amps are used. Emphasis placed on DC and transient response of circuits. 1 hr. lec., 2 hrs. lab. EECE 2010 must be taken concurrently.

**EECE 2030. Digital Electronics. 3-4 cr. hrs.**

Introduces students to the basic principles of digital circuit analysis and design. Topics covered include: Boolean Algebra, number systems, basic logic gates, standard combinational circuits, combinational design, timing diagrams, flip-flops, sequential design, standard sequential circuits and programmable logic devices. Prereq: Jr. stdng.

**EECE 2035. Circuits Laboratory 2. 1 cr. hr.**

Circuit design, construction, and test skills are expanded to include diode circuits and transistor amplifiers as well as passive and active filters. Emphasis placed on DC, AC and transient response of circuits containing passive and active devices. 1 hr. lec., 2 hrs. lab. Prereq: EECE 3010, which may be taken concurrently, EECE 2010 with minimum grade of C, ELEN 2020, which may be taken concurrently, and EECE 2015 with minimum grade of C.

**EECE 2710. Introduction to Computer Hardware and Software. 3 cr. hrs.**

Overview of computer hardware: information representation, the control unit, implementation of instruction sets, memories and storage devices, internal bus organization, the arithmetic/logic unit, the input/output unit, interfacing peripherals. Overview of computer software, operating system components: memory management, input/output, file management, scheduling, resource management. Layered operating system design, programming languages and language translators, application layer design, software tools, and system design and design process. Programming exercises in machine and assembly language and in the JAVA programming language. Prereq: EECE 1610 or COSC 1010.

**EECE 3010. Electronic Devices and Applications. 3 cr. hrs.**

Electronic components are discussed including semiconducting diodes, bipolar junction transistors, field effect transistors, etc. These devices will be analyzed from their terminal characteristics and their behavior in representative electronic circuits. Applications for devices include simple power supply analysis and design, class A amplifier analysis including transistor biasing and stability analysis, simple digital logic gates, etc. Prereq: EECE 2010 with minimum grade of C.

**EECE 3015. Digital Electronics Laboratory. 2 cr. hrs.**

Gaining experience in the design, assembly, testing, and trouble-shooting of digital electronic circuits. Experiments encompass a wide range of topics such as: basic logic gates, integrated circuit specifications, Boolean algebra implementations, standard combinational circuits, sequential circuit design, standard sequential circuits, programmable logic devices, digital interfacing, and microprocessors. 7400 series ICs, PALs, PROMs, and microprocessor devices are used. Offered both terms. 1 hr. lec., 3 hrs. lab. Prereq: ELEN 2030 with a minimum grade of C and EECE 2710, which may be taken concurrently; or ELEN 2020 with a minimum grade of C and BIEN 3200, which may be taken concurrently.

**EECE 4410. Integrated Microelectronic Circuits. 3 cr. hrs.**

Basic processing technology of integrated circuits, passive components and their parasitic effects, MOS transistors, bipolar transistors and diodes, design of silicon integrated circuits. Emphasis is placed on the design of circuits to meet given requirements. Design Elective. Prereq: EECE 3010 and ELEN 2020.

**EECE 4510. Digital Signal Processing. 3 cr. hrs.**

Introduction to the theory and practice of discrete-time signals and systems. Concepts covered include: Fourier Transforms, Z-transforms, linear time invariant system analysis in the time and frequency domains, sampling theory and Discrete Fourier Transforms. Application of these concepts includes: digital filter design techniques and the use of Fast Fourier Transforms for efficient frequency domain analysis. Labs and design projects related to specific signal processing applications are used to illustrate the material, including topics such as audio and image processing. Design Elective. Prereq: ELEN 3020 or COEN 2020.

## Electrical Engineering

**ELEN 2020. Electric Circuits 2. 3 cr. hrs.**

Sinusoidal steady-state analysis. Power in AC circuits. Linear and ideal transformers. Laplace transform methods and circuit analysis applications. Passive and active frequency-selective circuits. Balanced three-phase circuits. Two-port circuits. Prereq: EECE 2010 with minimum grade of C.

**ELEN 2040. Engineering Systems. 3 cr. hrs.**

Focuses on the modeling and solution of physical systems including translational and rotational mechanical systems, mass balance systems (fluids, chemical), thermal systems and electrical systems. Analytic solution techniques stress the universality of the mathematics for all systems. Computer solutions using MatLab and Simulink are used to further investigate the linear system behavior and to introduce non-linear system behavior. Prereq: EECE 2010 and MATH 2450.

**ELEN 3001. Electric Circuits and Machinery. 3 cr. hrs.**

Circuit modeling; basic solution methods for d-c and a-c circuits; d-c and a-c machines. Prereq: PHYS 1004 or PHYS 1014. May not be taken for credit by EECE students.

**ELEN 3002. Electric Circuits and Electronics. 4 cr. hrs.**

An experience in electrical circuits (AC and DC), electronic devices (junction, transistor, operational amplifier), bridges, digital circuits and Boolean implementation, combinational and sequential logic, memories. Use of PSpice software and Laplace transform. Analysis and design. This course may not be taken for credit by students in the Electrical Engineering programs. Prereq: PHYS 1004 or PHYS 1014.

**ELEN 3020. Linear Systems Analysis. 3-4 cr. hrs.**

Mathematical models of continuous-time and discrete-time signals and systems are studied in this course. The time domain viewpoint is developed for linear time invariant systems using the impulse response and convolution integral. The frequency domain viewpoint is also explored through the Fourier Series and Fourier Transform. Basic filtering concepts including simple design problems are covered. Application of the Laplace transform to block diagrams, linear feedback, and stability including Bode plots are discussed. The sampling theorem, the z-transform, and the Discrete Fourier Transform are introduced. Examples of electrical, mechanical, and biomedical signals and systems are used extensively throughout the course. Prereq: ELEN 2020 with minimum grade of C and MATH 2451; or ELEN 3002 with minimum grade of C and MATH 2451; or BIEN 2300 with minimum grade of C and MATH 2451; or ELEN 3001 with minimum grade of C and MATH 2451.

**ELEN 3025. Electrical Instrumentation Laboratory. 2 cr. hrs.**

Develops familiarity with typical electronic instruments and terminology. Combines theory with experience to analyze and design electrical networks. Learning experimental technique and documentation. 1 hr. lec., 3 hrs. lab. Prereq: EECE 3010 with minimum grade of C, ELEN 2020 with minimum grade of C, and EECE 2015 with minimum grade of C.

**ELEN 3030. Analog Electronics. 3-4 cr. hrs.**

Analysis and design of analog electronic circuits. Low and high frequency models for both bipolar and field effect transistors. Design features and operating characteristics of integrated linear circuits with emphasis on operational amplifiers and op-amp circuits. Prereq: EECE 3010 with minimum grade of C and ELEN 2020 with minimum grade of C.

**ELEN 3035. Analog Electronics Laboratory. 2 cr. hrs.**

Gaining experience in the design, assembly, testing, and trouble-shooting of analog electronic circuits. Experiments encompass a wide range of topics such as: amplifiers, filters, power supplies, power control, oscillators, and communication circuits. Transistors, op-amps, general purpose, and specific purpose devices are used. 1 hr. lec., 3 hrs. lab. Prereq: ELEN 3030 with minimum grade of C and ELEN 3025 with minimum grade of C.

**ELEN 3110. Electromagnetic Fields 1. 3-4 cr. hrs.**

Development and use of the point and integral forms of Maxwell's equations for static and quasi-static electric and magnetic fields with emphasis placed on the vector nature of these fields. Includes analytic and computational solutions to field's problems. The wave equation for E.M. fields is derived and discussed. Prereq: ELEN 2020 with minimum grade of C, MATH 2450, PHYS 1004 or PHYS 1014 and knowledge of a higher level computer language.

**ELEN 3120. Electromagnetic Fields 2. 3 cr. hrs.**

Development and use of Wave Equations as derived from Maxwell's equations to explain the propagation of electromagnetic waves. Includes treatment of physical optics, antennas, waveguides and transmission lines. Prereq: ELEN 3110 with minimum grade of C.

**ELEN 3210. Electric Drives. 3 cr. hrs.**

Application of electromagnetic field and circuit theory to electromechanical energy conversion systems. Solutions for the magnetic fields, electromagnetic and electrostatic induced forces, and equivalent circuits using conservation of energy principles. Operation of electric machinery from solid-state power switch converters. Prereq: ELEN 3110 with minimum grade of C.

**ELEN 3991. Co-op Work Period 1. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3991, 3992, etc. Fee. SNC/UNC grade assessment.

**ELEN 3992. Co-op Grading Period 1. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U grade assessment.

**ELEN 3993. Co-op Work Period 2. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3993, 3994, etc. Fee. SNC/UNC grade assessment.

**ELEN 3994. Co-op Grading Period 2. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U grade assessment.

**ELEN 4015. Advanced Electrical Engineering Laboratory. 3 cr. hrs.**

Project-based laboratory experience in the design, assembly and testing of advanced electronic and electrical systems. Course content announced prior to each term. Students may enroll in the course more than once as the content of the course changes. Possible topics for the advanced laboratory experience include (but are not limited to) advanced electromagnetic system design, optical and high frequency electronics, nonlinear control systems, motor control circuits and systems, power electronics, communications circuits, integrated microelectronic circuit design and fabrication (VLSI), advanced analog system design, advanced digital system design, microprocessor system-level design. Instruction and use of the appropriate test and measurement tools for design, assembly and testing of systems. 2 hrs. lec., 2 hrs. lab. Prereq: Cons. of instr.

**ELEN 4090. Developments in Electronics. 1-3 cr. hr.**

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include laser electronics, optoelectronics and photonics, RF circuit design, SOC design. Prereq: Cons. of instr. or Sr. stdng.

**ELEN 4130. Antenna Theory and Design. 3 cr. hrs.**

Design and use of antennas of varying types, including wire, broadbands, horn, and reflector antennas in transmitting and receiving applications. The application and design of antenna arrays, and an introduction to diffraction theory. DESIGN ELECTIVE. Prereq: ELEN 3120.

**ELEN 4150. Applied Finite Elements in Electromagnetics. 3 cr. hrs.**

Introduction to finite element (FE) analysis as applied to linear and static electromagnetic field problems. Review of basic field formulations using Maxwell's electromagnetic field equations, solution of boundary value problems using the finite difference methods, FE formulations, assembly of elemental and global matrices, pre-processing, post-processing. Application of the FE method using one-dimensional and two-dimensional elements, magnetostatic and electrostatic analysis, and the use of commercially available software packages. Prereq: ELEN 3110 or equiv.

**ELEN 4190. Developments in Electromagnetics. 1-3 cr. hr.**

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include wireless and microwave components and systems, electromagnetic compatibility, radio wave propagation. Prereq: for ELEN 4190: Cons. of instr. or Sr. stdng.

**ELEN 4210. Design and Analysis of Electric Motor-Drive Systems. 3 cr. hrs.**

Principles of design of AC and DC electric machines, in particular design of electric motors in power electronically controlled adjustable speed drives, torque and power to volume analysis under constant volts per hertz torque-speed control. Covers design of AC induction, synchronous, universal and DC conventional as well as brushless DC motors, and low horsepower motors in adjustable speed drives. Covers effects of space and time harmonics on motor design and performance are covered including harmonic abatement for control of torque pulsation. Use of modern modeling techniques throughout. Design elective. Prereq: ELEN 2020, ELEN 3110 and ELEN 3210.

**ELEN 4220. Power Electronics for Renewable Energy Systems. 3 cr. hrs.**

Fundamental concepts, techniques, and methods for design and analysis of power electronic systems. Modeling of semiconductor switching devices for use in power electronic systems. Practical aspects and power electronic conversion techniques for rectifiers, DC-to-DC converters, DC-to-AC inverters and their applications in wind and solar renewable energy and power electronic systems. Design elective for EECE Program. Prereq: ELEN 3030 and ELEN 3020.

**ELEN 4230. Renewable and Legacy Electric Energy Systems Analysis. 3 cr. hrs.**

Elements of renewable and legacy electric power systems; fundamental concepts and techniques for design and analysis; per unit system; load flow; economic dispatch; smart grids and load management; steady state and transient power system stability. Design elective. Prereq: ELEN 2020 and ELEN 3020.

**ELEN 4240. Protection and Monitoring of Electric Energy Systems. 3 cr. hrs.**

Principles of design of relay and sensor systems for detection of faulty operating conditions in electric generators, transformers, power transmission lines, motors and other loads in power systems. Symmetrical components, balanced and unbalanced faults including single and multiple unbalances. Design and hierarchical coordination of protection systems for interconnected generation, transmission and distribution facilities in power systems, which includes integrated generator-transformer-busbar-transmission line-load protection and analysis of operation under fault conditions. Design elective. Prereq: ELEN 2020, ELEN 3110 and ELEN 3210.

**ELEN 4250. Transients in Electric Energy Systems and Devices. 3 cr. hrs.**

Covers microsecond fast transients in power systems and devices resulting from lightning strokes, switching surges in power systems and devices, as well as impulse surges resulting from pulse width modulation in modern adjustable speed drives, using distributed parameter models and analysis of transmission lines and windings of transformers, generators and motors. Also covers successive reflections, transition points, wavefront flattening techniques and surge arrester design applications for voltage buildup reduction and control are studied. Includes polyphase multi-velocity multi-conductor system transients. Design elective. Prereq: ELEN 2020 and ELEN 3110.

**ELEN 4290. Developments in Energy and Power. 1-3 cr. hr.**

Course content is announced prior to each term. Students may enroll in the course more than once as subject matter changes. May be taught in traditional lecture format or as a seminar which focuses on readings from current literature. Topics may include: electronics for machine and drive systems, electrical transients, faults and diagnostics and protection in power devices and systems, renewable energy systems, smart grids and advanced topics in the electric energy engineering area. Prereq: Cons. of instr. or Sr. stndg.

**ELEN 4310. Control Systems. 3 cr. hrs.**

Review of continuous-time linear systems. Time-domain system analysis. Time-domain design of lead/lag and PID controllers. Root-Locus technique. Frequency-domain system analysis including Nyquist, Bode, and Nichols analysis and relative stability. Frequency-domain design/lag and PID controllers. DESIGN ELECTIVE. Prereq: ELEN 3020.

**ELEN 4320. Digital Control Systems. 3 cr. hrs.**

Review of sampling processes, discrete time linear systems analysis and z-transform. Discrete time and sampled data state-variable analysis. Stability analysis, time domain and frequency-domain analysis and design. Analysis, design and computer implementation of digital algorithms and control systems. Design Elective. Prereq: ELEN 3020 with minimum grade of C.

**ELEN 4390. Developments in Control. 1-3 cr. hr.**

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include optimal, adaptive and robust control methods, digital control and nonlinear systems. Prereq: Cons. of instr. or Sr. Stndg.

**ELEN 4430. Physical Principles of Solid State Devices. 3 cr. hrs.**

Fundamental physical principles of solid state devices are presented. The operation of modern semiconductor devices is explained from first principles and these principles are used to extend the students' knowledge of devices used in electronic circuits. Prereq: EECE 3010 with minimum grade of C, ELEN 3110 with minimum grade of C, and PHYS 1004 or PHYS 1014.

**ELEN 4450. Surface Acoustic Wave Devices. 3 cr. hrs.**

This course is concerned with the theory and applications of surface acoustic wave devices. Major topics covered include: theory of surface and other acoustic wave modes; design, analysis, and performance of interdigital devices; SAW bandpass filters; oscillators and sensors; and applications of SAW devices in wireless communications. Design Elective. Prereq: ELEN 3020 and ELEN 3110; or cons. of instr.

**ELEN 4460. Sensor Devices: Theory, Design, and Applications. 3 cr. hrs.**

Sensor classification and transduction principles. Fundamental principles and theory of operation of various types of sensors, based on various technologies which include optical, electrical, acoustical, thermal, magnetic, mechanical and chemical. Analysis of sensor signals. Study of sensor characteristics which include hysteresis, non-linearity, saturation, repeatability, sensitivity, selectivity and resolution. Design and practical implementations of various sensors for scientific, industrial and consumer applications. Design elective. Prereq: Sr. stndg.

**ELEN 4490. Developments in Devices. 1-3 cr. hr.**

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include optoelectronic devices, nano-scale devices, solid-state devices, integrated electronic devices, power devices, electro-mechanical devices, quantum devices. Prereq: Cons. of instr. or Sr. stndg.

**ELEN 4550. Developments in Signal Processing. 1-3 cr. hr.**

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include filter design, DSP hardware, Nonlinear signal processing and multi-dimensional signal processing. Prereq: Cons. of instr. or Sr. stndg.

**ELEN 4560. Introduction to Communication Systems. 3 cr. hrs.**

Survey of digital and analog communication systems including signal representation, modulation techniques, transmit and receive network design considerations. Prereq: ELEN 3020.

**ELEN 4565. Optical Fiber Communications. 3 cr. hrs.**

Fundamental principles and theories of optical fiber systems are introduced and developed. Review of electromagnetic principles of waveguides. Step-Index and Graded-Index, single and multimode fibers. Signal analysis in optical fibers: mode interaction, attenuation, dispersion and pulse spreading. Operating characteristics of optical sources and photo-receivers with impact on system performance. Coupling to a fiber and distribution system. Optical fiber communication system design. Design Elective. Prereq: Sr. stndg. and ELEN 3110.

**ELEN 4570. Wireless Communications. 3 cr. hrs.**

Fundamentals, analysis and design of cell systems, including trunking theory and grade of service. Large scale and small scale path loss analysis and modeling. Overview of modulation techniques, including amplitude and frequency modulating, and digital modulation techniques. Design Elective. Prereq: ELEN 3020 and ELEN 3110.

**ELEN 4590. Developments in Communications. 1-3 cr. hr.**

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include digital modulation and detection, coding theory, information theory. Prereq: Cons. of instr. or Sr. stndg.

**ELEN 4920. Principles of Design. 3 cr. hrs.**

Course content focuses on a structured product design and development process that includes project definition, customer needs identification, product specification, concept generation, and concept selection. Course also focuses on issues related to teamwork, project management, and effective communication. Student team design projects culminate in the development of a technically and economically viable concept and a proposal for future development of this concept (done in the second semester of this two-course sequence). 2 hrs. lec., 2 hrs. lab. Prereq: Sr. stndg.; Co-op students, jr. stndg. Cross-listed with BIEN 4920, COEN 4920 and MEEN 4920.

**ELEN 4991. Co-op Work Period 3. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4991, 4992, etc. Fee. SNC/UNC grade assessment.



**ELEN 4992. Co-op Grading Period 3. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U grade assessment.

**ELEN 4993. Co-op Work Period 4. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4993, 4994, etc. Fee. SNC/UNC grade assessment.

**ELEN 4994. Co-op Grading Period 4. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U grade assessment.

**ELEN 4995. Independent Study in Electrical Engineering. 1-4 cr. hr.**

Undergraduate independent study project of either a theoretical or experimental nature. Prereq: Jr. stndg., 3.000 GPA, cons. of instr., and cons. of dept. ch.

**ELEN 4998. Senior Design Project. 3 cr. hrs.**

Course focuses on detailed design, prototyping, and testing design concepts. Course includes topics directly relevant to student design projects and careers in the engineering profession. Student team design projects culminate in a final report that documents the performance and details (engineering drawings and/or documentation) of their final design. 2 hrs. lec., 2 hrs. lab. Prereq: ELEN 4920. Cross-listed with BIEN 4998, COEN 4998 and MEEN 4998.

**Engineering Ethics Values****ENEV 1952. Ethics and Values Colloquium 1. 1 cr. hr.**

The colloquium consists of a series of lectures, films, and discussions involving social problems with significant technical components, societal values and engineering ethics. Students are required to meet approximately three to four times during the term. S/U grade assessment.

**ENEV 2952. Ethics and Values Colloquium 2. 1 cr. hr.**

The colloquium consists of a series of lectures, films, and discussions involving social problems with significant technical components, societal values and engineering ethics. Students are required to meet approximately three to four times during the term. S/U grade assessment.

**ENEV 3952. Ethics and Values Colloquium 3. 1 cr. hr.**

The colloquium consists of a series of lectures, films, and discussions involving social problems with significant technical components, societal values and engineering ethics. Students are required to meet approximately three to four times during the term. S/U grade assessment.

**ENEV 4952. Ethics and Values Colloquium 4. 1 cr. hr.**

The colloquium consists of a series of lectures, films, and discussions involving social problems with significant technical components, societal values and engineering ethics. Students are required to meet approximately three to four times during the term. S/U grade assessment.

**ENEV 4995. Independent Study. 1-4 cr. hr.**

Undergraduate independent study project of either a theoretical or experimental nature. Prereq: Jr. stndg, 3.000 GPA, cons. of instr., and cons. of dept. ch.

## General Engineering

### **GEEN 1120. Introduction to Graphics for Engineers. 1 cr. hr.**

Students learn to visualize geometric information and graphically communicate engineering ideas in three dimensional space. Students are exposed to graphic science and application of computer-aided design software to engineering. Conventional practices are discussed along with the application of geometric data bases to design activities and problem solving. Prereq: Enrolled in Engineering.

### **GEEN 1130. Introduction to Engineering Computing. 1 cr. hr.**

An introduction to computer programming using a structured computer language. Includes data types, data structures, control structures and design methodologies. Laboratory experience introduces students to programming computers to solve engineering problems. Prereq: Enrolled in Engineering.

### **GEEN 1200. Engineering Discovery 1. 3 cr. hrs.**

This course introduces the student to the practice of multidisciplinary systems engineering and engineering problem solving. Professionalism, teamwork, and technical communication are stressed. The Engineering System Investigation Process (modeling, analysis, and measurement) is applied to fundamental electrical, mechanical, fluid, thermal, and electromechanical systems using MATLAB and LabView. Elementary computer programming is developed. The Engineering Design Process and the role graphical communication - visualization, sketching, and computer graphics - plays in that process is studied. Students become proficient in the use of a three-dimensional computer graphics software. Offered in fall term.

### **GEEN 1210. Engineering Discovery 2. 3 cr. hrs.**

Students, working in small teams, apply the Engineering System Investigation Process to actual multidisciplinary products, systems, or processes. Students develop broad technical understanding, as well as in-depth technical knowledge in selected aspects, and also come to appreciate the manufacturing and materials choices, the design decisions, and the business and human-values aspects of the chosen product, system, or process. Internet-based documentation and presentation are emphasized. In addition, engineering computing using MATLAB and LabVIEW, along with computer programming, to solve common multidisciplinary engineering problems is studied. Offered in spring term. Prereq: GEEN 1200.

### **GEEN 2952. Professional Development for Engineers. 0-1 cr. hrs.**

Objective is to assist engineering students with their career discernment and to promote professional development. Focuses on the skills needed to secure a job and provides resources and tools to conduct a job search. Topics include: professional development; engineering options; cooperative education and internship opportunities; ethics as well as job search, resume writing, interviewing, professional communication and networking techniques. All sophomore-level and transfer students required to attend. Prereq: Enrolled in the College of Engineering.

### **GEEN 2960. Engineering Service Seminar. 0 cr. hrs.**

Consists of a series of lectures, video presentations and discussions involving engineering-related service learning. Reflection providing an awareness of an engineer's professional responsibilities to the community at large, and future opportunities for such involvement at the local, national and/or international levels. SNC/UNC grade assessment.

### **GEEN 4995. Independent Study in General Engineering. 1-3 cr. hr.**

Undergraduate independent study project of either theoretical or experimental nature. Prereq: Jr. stdng., 3.000 GPA, cons. of instr., and cons. of dept. ch.

## Mechanical Engineering

### **MEEN 2110. Statics. 3 cr. hrs.**

Fundamentals of forces and force systems. Internal and external forces. Support reactions. Definition of a free-body diagram (FBD). Emphasis on development of FBD-drawing skills. Moment of a force. Force system resultants. Vector methods in two and three dimensions. Equilibrium analysis of particles and rigid bodies. Truss analysis by methods of joints and sections. Analysis of simple frames and machines. Analysis of friction. Centroids of composite areas and volumes. Resultants of distributed loads. Prereq: MATH 1451 or MATH 1455, which may be taken concurrently. Same as CEEN 2110.

### **MEEN 2120. Dynamics. 3 cr. hrs.**

Fundamentals of motion of particles and rigid bodies. Application of Newton's laws. Principles of position, velocity, and acceleration. Use of work-energy and impulse-momentum methods. Introduction to vibrations. Prereq: CEEN 2110 or MEEN 2110. Same as CEEN 2120.

### **MEEN 2122. Statics and Dynamics. 4 cr. hrs.**

Fundamentals of forces, force systems and their application to static and dynamic bodies and systems of particles emphasizing vector methods in two and three dimensions. Equations of equilibrium. Friction, applications of Newton's laws, energy and momentum methods. Prereq: MATH 1451 or MATH 1455, which may be taken concurrently. Same as CEEN 2122.

### **MEEN 2130. Mechanics of Materials. 3 cr. hrs.**

Concepts of stress, strain and deflection. Factor of safety. Mechanical properties of materials. Stress and deformation calculations for cases of axially loaded rods, torsion of circular shafts, beam bending and combined loading. Horizontal shear connectors in built-up beams. Area moment of inertia. Parallel-axis theorem. Introduction to beam design. Stress concentration. Stress transformation and principal stress calculation by Mohr's circle. Statically indeterminate analysis. Elastic buckling of columns. Prereq: CEEN 2110 or MEEN 2110. Same as CEEN 2130.

### **MEEN 2210. Electromechanical Engineering Systems. 3 cr. hrs.**

Electromechanical engineering systems and the Engineering System Investigation Process. Physical and mathematical modeling of mechanical, electrical, magnetic, and electromechanical systems. Dynamic analysis: time response and frequency response; analytical and numerical simulation. Electromechanical actuators: solenoid, vibration exciter, and brushed dc motor. Introduction to measurement systems: analog and digital; motion, electrical, and magnetic sensors. Electronics for actuators, sensors, and controls. Introduction to control systems: analog vs. digital, open-loop vs. closed loop, stability and performance. Introduction to On-Off and PID control. Industrial case studies emphasizing integration. Laboratory exercises throughout the course. Extensive use of MatLab and LabView software programs. 2 hrs. lec., 2 hrs. lab. Prereq: PHYS 1004, MATH 2451 (which may be taken concurrently), MEEN 2120 (which may be taken concurrently).

### **MEEN 2402. Engineering Economy. 3 cr. hrs.**

Economic analysis for engineering and managerial decisions in the firm, value analysis, equipment replacement, evaluation of competing projects, inflation, cash flows, tax problems, depreciation, time value of money and various techniques of analyzing and reducing costs.

### **MEEN 2460. Materials Science. 3 cr. hrs.**

Atomic structure of matter, types of bonding, crystallography, role of imperfections, and ionic diffusion. Electric, magnetic, dielectric, and semiconducting properties. Mechanical properties, corrosion, and phase diagrams. Prereq: CHEM 1001, which may be taken concurrently.

**MEEN 3210. Multidisciplinary Engineering Systems. 3 cr. hrs.**

Multidisciplinary engineering systems and the engineering system investigation process. Physical and mathematical modeling of thermal, fluid, and multidisciplinary systems. Dynamic analysis: time response and frequency response; analytical and numerical simulation. Electromechanical actuators; brushless dc motors and step motors. Fluid actuators: hydraulic and pneumatic. Measurement systems: analog and digital; thermal and fluid sensors. Electronics for actuators, sensors, and controls. Control system design: root-locus and frequency-response methods, PID control, state-space control, industrial control. Industrial case studies emphasizing integration. Laboratory exercises throughout the course. Extensive use of MatLab and LabVIEW. 2 hrs. lec., 2 hrs. lab. Prereq: MEEN 2210.

**MEEN 3220. Dynamics of Mechanical Systems. 3 cr. hrs.**

Analytical and computational analysis of the kinematics and kinetics of planar multi-body mechanical systems. Vibration analysis of single degree of freedom systems. Engineering applications including dynamic balancing, vibration absorption and vibration isolation. Prereq: MATH 2451 or MATH 2455; and CEEN 2120 or MEEN 2120.

**MEEN 3250. Design of Machine Elements 1. 4 cr. hrs.**

Detailed design of structural elements, shafts, gears, bearings, and other machine elements. Laboratory activities which cover the theoretical and experimental analysis of machine elements. 3 hrs. lec., 2 hrs. lab. Prereq: CEEN 2110 or MEEN 2110; and CEEN 2130 or MEEN 2130.

**MEEN 3260. Numerical Methods of Mechanical Systems. 3 cr. hrs.**

Numerical algorithms (math analysis, optimization, function approximation) for analysis and preliminary design of engineering systems. Development and use of MATLAB functions. Finite element software for solid modeling and analysis of elastic systems. 3 hrs. lec., 1 hr. lab. Prereq: MEEN 3220 and CEEN 2130 or MEEN 2130.

**MEEN 3310. Thermodynamics 1. 3 cr. hrs.**

Elementary principles of equilibrium thermodynamics of pure and mixed substances, including applications to systems and processes. Relationships between heat and work, the first law of thermodynamics, are applied to either open or closed systems, operating at either steady or unsteady conditions. Second law of thermodynamics is applied to assessing the efficiency of devices and systems. Prereq: MATH 1451 or MATH 1455; PHYS 1003 or PHYS 1013.

**MEEN 3320. Fluid Mechanics. 3 cr. hrs.**

Fundamental conservation laws of mass, momentum and energy as applied to fluid systems. Properties of fluids, hydrostatics, flow of real fluids in closed and open systems, dynamic similarity, dimensional analysis and viscous and inviscid fluid flow. Same as CEEN 3150. Prereq: MATH 2450 and MEEN 2120 or CEEN 2120 or MEEN 2122 or CEEN 2122.

**MEEN 3330. Fundamentals of Heat Transfer. 3 cr. hrs.**

Overview of principal mechanisms of heat transfer: conduction, convection, and thermal radiation. Application of conduction and forced convection to heat exchangers. Discussion of theory and applications of conduction, forced and natural convection, boiling and condensation and thermal radiation. Prereq: MATH 2451, MEEN 3310, and MEEN 3320.

**MEEN 3340. Thermodynamics 2. 3 cr. hrs.**

This course is the culmination of thermodynamic, fluid and heat transfer concepts to the application of power and refrigeration cycles, psychrometrics systems, and combustion processes. Course includes a laboratory section in which experiments are conducted to demonstrate, test, and assess devices, processes and cycles. 2 hrs. lec.; 2 hrs. lab. Prereq: MEEN 3310 and MEEN 3330.

**MEEN 3426. Engineering Statistics. 3 cr. hrs.**

Covers the basic topics of probability and statistics that engineers will commonly use in their careers. Topics include sampling and descriptive statistics, basic probability (including conditional probability and linear functions of random variables), commonly used distortions (Bernoulli, Binomial, Poisson, Normal and others), confidence intervals, hypothesis testing, and correlation and simple linear regression. Focuses on the applications of these methods to engineering problems Prereq: MATH 1451.

**MEEN 3443. Manufacturing Engineering. 3 cr. hrs.**

The types of processes available to manufacture various products. The characteristics of these processes and how they interact with design requirements, tolerances, safety and the environment. Integration of basic concepts into complete processes. Determination of the process to manufacture various assigned products. 2 hrs. lec., 2 hrs. lab. Prereq: MEEN 2460.

**MEEN 3460. Materials Selection in Mechanical Design. 3 cr. hrs.**

Design methodology and the criteria for the selection of materials from the four classes of materials (metals, plastics, ceramics and composites) are discussed. Criteria include processing requirements, mechanical properties, and environmental resistance. A rationale for selecting materials based on materials selection charts is presented. The process-structure-property relationship for ferrous and non-ferrous alloys, plastics, ceramics and composites is presented from the point of view of understanding selection criteria. Considerations of cost and availability are also taken into consideration. 2 hrs. lec.; 2 hrs. lab. Prereq: MEEN 2460.

**MEEN 3991. Co-op Work Period 1. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3991, 3992, etc. Fee. SNC/UNC grade assessment.

**MEEN 3992. Co-op Grading Period 1. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U grade assessment.

**MEEN 3993. Co-op Work Period 2. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3993, 3994, etc. Fee. SNC/UNC grade assessment.

**MEEN 3994. Co-op Grading Period 2. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U grade assessment.

**MEEN 4220. Intermediate Dynamics. 3 cr. hrs.**

Develop an understanding of the principles of 3D rigid body kinematics (motion) and kinetics (forces and accelerations). Use these principles to analyze the dynamic behavior of mechanical systems. Learn to use analytical mechanics tools including virtual work and Lagrange's method. Develop a systematic approach for solving engineering problems. Prereq: MEEN 2120.

**MEEN 4230. Intermediate Mechanics of Materials. 3 cr. hrs.**

Review of beam theory; asymmetric bending, shear center, thin-walled sections; torsion of non-circular sections, open and closed thin-walled sections; energy methods, Castigliano's second theorem, statically indeterminate structures, internal static indeterminacy; curved beams. Prereq: CEEN 2130 or MEEN 2130.

**MEEN 4240. Polymers and Polymer Composites. 3 cr. hrs.**

Introduction to physical/chemical structure of polymers, polymer characterization, polymer material properties and mechanical testing methods, elastic and viscoelastic polymer response, processing methods, composite materials, and the selection of polymers in design applications. Prereq: CEEN 2130 or MEEN 2130.

**MEEN 4245. Fatigue and Fracture Mechanics. 3 cr. hrs.**

Application of fatigue and fracture models to engineering design. Stress-life (high-cycle), strain-life (low cycle), and fatigue crack growth models for fatigue. Introduction to linear elastic fracture mechanics. Statistical considerations in failure. Fail safe design practices. Course includes illustrative case studies. Prereq: CEEN 2130 or MEEN 2130.

**MEEN 4250. Design of Machine Elements 2. 3 cr. hrs.**

Detailed design of gears and cams. Integration of dynamics into design of machinery is emphasized. Topics include balancing of machinery, selection of motors and critical frequency analysis, and miscellaneous power transmission components. Use of spreadsheets and computer programs to assist in the design of various components. Prereq: MEEN 3250 or equiv.

**MEEN 4265. Intermediate Finite Element Methods. 3 cr. hrs.**

Introduces the finite element solution method for linear, static problems. Includes calculation of element stiffness matrices, assembly of global stiffness matrices, exposure to various finite element solution methods, and numerical integration. Emphasizes structural mechanics, and also discusses heat transfer and fluid mechanics applications in finite element analysis. Computer assignments include development of finite element code (FORTRAN or C) and also use of commercial finite element software (ANSYS and/or MARC). Prereq: MEEN 3260.

**MEEN 4270. Physical Systems Modeling. 3 cr. hrs.**

Principles of modeling of physical systems, including devices and processes. Development of models of physical systems: mechanical, electrical, fluid, thermal and coupled systems. Time-dependent behavior of interconnected devices and processes. Computer-based modeling and simulation of physical systems. Identification using models and measured data. Introduction to control systems analysis and design. Prereq: MATH 2451.

**MEEN 4275. Mechatronics. 3 cr. hrs.**

Mechatronics, as an engineering discipline, is the synergistic combination of mechanical engineering, electronics, control engineering, and computer science, all integrated through the design process. This course covers mechatronic system design, modeling and analysis of dynamic systems, control sensors and actuators, analog and digital control electronics, interfacing sensors and actuators to a microcomputer/microcontroller, discrete and continuous controller design, and real-time programming for control. Prereq: MEEN 3270 and MEEN 3220.

**MEEN 4310. Internal Combustion Engines. 3 cr. hrs.**

Fundamentals of design and operation of internal combustion engines and how these affect performance, fuel requirements, and environmental impact. Study of fluid flow, thermodynamics, combustion, heat transfer and friction phenomena, and fuel properties relevant to engine power, efficiency and emissions. Examination of spark-ignition, diesel, stratified charge, HCCI and mixed-cycle engines. Prereq: MEEN 3340.

**MEEN 4330. Optics, Lasers and Spectroscopy in Engineering. 3 cr. hrs.**

Topical overview on the uses of optics, lasers, and spectroscopic measurement techniques in engineering and scientific disciplines. Technical content includes basic principles of geometric optics, principles behind and characteristics of laser operation, and linear spectroscopy. Emphasis on absorption and emission techniques for sensor development. Prereq: PHYS 1004 or PHYS 1014.

**MEEN 4350. Transport Phenomena. 3 cr. hrs.**

The subject of transport phenomena includes three closely related topics: fluid dynamics, mass transfer, and heat transfer. Fluid dynamics involves the transport of momentum, mass transfer is concerned with the transport of mass of various chemical species, and heat transfer deals with the transport of energy. In practice, rarely are these phenomena acting alone. Thus in this introductory course, these three topics are studied together so that a more cohesive understanding of these interrelated processes is developed. Prereq: MEEN 3340.

**MEEN 4360. Intermediate Thermodynamics. 3 cr. hrs.**

This intermediate course will cover fundamentals of thermodynamics, including classical and statistical approaches with application to equilibrium and non-equilibrium, non-reactive and reactive systems. Topics relevant to micro/nanoscale and biological systems may be covered. Prereq: MEEN 3340.

**MEEN 4410. Experimental Design. 3 cr. hrs.**

Application of statistical concepts to design engineering experiments to improve quality, production techniques, and reliability. Use and advantages of various models; factorial, fractional factorial, orthogonal arrays and fractional designs. Prereq: MATH 4720, MEEN 2426, or cons. of instr.

**MEEN 4420. Failure Analysis. 3 cr. hrs.**

Methodology of failure analysis. Studies of brittle fracture, ductile fracture, fatigue, stress corrosion and electro-chemical corrosion as applied to the failure of metals. Involves some laboratory work and analyses of a variety of metallurgical failures. Prereq: MEEN 3460 and CEEN 2130 or MEEN 2130.

**MEEN 4430. Powder Metallurgy. 3 cr. hrs.**

The course introduces a modern technology with growing importance. It covers the basics of powder metallurgy with main emphasis on sintered steel. The primary topics covered are powder production, die compacting, sintering theory and practice, full density processing, properties under static and dynamic loading conditions. Prereq: MEEN 2460.

**MEEN 4440. Processing and Forming of Materials. 3 cr. hrs.**

Heat and mass transfer, thermodynamics, and stress analyses involved in materials forming process. Solidification and castings, vapor deposition of thin films and coatings. Sintering of powders and aggregates. Mechanical forming and drawing, forging, swaging, rolling. Absolute reaction rate theory for polymerization and chemical processes. Fabrication techniques for composite materials. Prereq: MEEN 2460.

**MEEN 4450. Mechanical Behavior of Materials. 3 cr. hrs.**

Stress and strain relationships for elastic behavior. Theory of plasticity. Plastic deformation of single crystals and polycrystalline aggregates. Dislocation theory, fracture, internal friction, creep and stress rupture and brittle failure. Prereq: MEEN 3460 and CEEN 2130 or MEEN 2130; or cons. of instr.

**MEEN 4475. Ergonomics. 3 cr. hrs.**

Ergonomics maximizes the health and safety of workers, while maintaining productivity and quality. This course covers biomechanical and physiologic aspects of workplace design, such as engineering anthropometry, cumulative trauma disorders, (including carpal tunnel syndrome), low back injuries, hand tool design and evaluation, methods of surveillance in industrial environments, modeling, and ergonomics guidelines. Laboratory sessions are offered to demonstrate ergonomic principles and also provide students with hands-on experience in collecting data and conducting experiments. 2 hrs. lec., 2 hrs. lab. Prereq: GEEN 1120 or equiv.; and MEEN 2426 or equiv.

**MEEN 4485. Welding Engineering. 3 cr. hrs.**

Arc welding physics, fundamentals of power supplies and welding circuits, fusion and solid-state welding processes, weld testing, analysis of welded joints, demonstrations using various processes. Prereq: CEEN 2130 or MEEN 2130; and MEEN 3443.

**MEEN 4570. Introduction to Biomaterials Science and Engineering. 3 cr. hrs.**

Introduction to the principal areas in Materials Science. Structure and bonding, crystallography and mechanical properties of materials. Techniques to study structure and properties of materials, structure and mechanical properties of bone and various implant materials and their mode of failures. Same as BIEN 4420. Prereq: MEEN 2460.

**MEEN 4590. Engineering Fundamentals Review. 1 cr. hr.**

Review of basic science, mathematics, engineering science, and economics. S/U grade assessment. Prereq: Sr. stdng. Same as CEEN 4710.

**MEEN 4920. Principles of Design. 3 cr. hrs.**

Course content focuses on a structured product design and development process that includes project definition, customer needs identification, product specification, concept generation, and concept selection. Course also focuses on issues related to teamwork, project management, and effective communication. Student team design projects culminate in the development of a technically and economically viable concept and a proposal for future development of this concept (done in the second semester of this two-course sequence). 2 hrs. lec., 2 hrs. disc. Prereq: Sr. stdng; Co-op students, Jr. stdng. Cross-listed with BIEN 4920, COEN 4920, EECE 4920.

**MEEN 4931. Topics in Mechanical Engineering. 3 cr. hrs.**

Covers a unique perspective or in-depth topic in: energy conversion, mechanical analysis and design and manufacturing systems.

**MEEN 4991. Co-op Work Period 3. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4991, 4992. etc. Fee. SNC/UNC grade assessment.

**MEEN 4992. Co-op Grading Period 3. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U grade assessment.

**MEEN 4993. Co-op Work Period 4. 0 cr. hrs.**

Registration for approved cooperative education program work assignments is required of all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4993, 4994 etc. Fee. SNC/UNC grade assessment.

**MEEN 4994. Co-op Grading Period 4. 1 cr. hr.**

Grading for preceding co-op work assignments is accomplished by review of Employer Evaluation Forms, Work Exit Reports, and other materials as required during each term in school following a work period. No tuition is charged for Grading Periods. S/U grade assessment.

**MEEN 4995. Independent Study in Mechanical Engineering. 1-3 cr. hr.**

Undergraduate independent study project of either theoretical or experimental nature. Prereq: Jr. stdng., 3.000 GPA, cons. of instr., and cons. of dept. ch.

**MEEN 4998. Senior Design Project. 3 cr. hrs.**

Course focuses on detailed design, prototyping, and testing design concepts. Course includes topics directly relevant to student design projects and careers in the engineering profession. Student team design projects culminate in a final report that documents the performance and details (engineering drawings and/or documentation) of their final design. 2 hrs. lec., 2 hrs. disc. Prereq: MEEN 4920. Cross-listed with BIEN 4998, COEN 4998, and EECE 4998.





## College of Health Sciences

### From the Dean

College of Health Sciences website (<http://www.marquette.edu/chs/index.shtml>)

Welcome!

The College of Health Sciences features nationally recognized and ranked programs in athletic training, biomedical sciences, clinical laboratory science, exercise physiology, physical therapy, physician assistant studies and speech pathology and audiology. From state-of-the-art research laboratory and teaching facilities to many health profession and service organizations, our students find abundant opportunity to interact with faculty scholars who are passionate about teaching, research and service.

Our mission as a Jesuit university is to provide a distinctive, rigorous, and well-rounded education, and our location in the heart of the city of Milwaukee promises ample opportunity for exposure to the health and medical professions that comes with a major metropolitan setting. Moreover, you can expect excellence from our faculty, and will be in elite company among our academically talented students. Whether through outstanding professional programs of study or in rigorous pre-professional and undergraduate education, our dedicated faculty and committed students have created a truly vibrant academic environment that's waiting for you.

Sincerely,

William E. Cullinan, Ph.D.  
Dean, College of Health Sciences

### Mission Statement

The College of Health Sciences has the mission of preparing students for careers in the health sciences and as health care providers. It is dedicated to improving health care by educating excellent, ethical health care professionals through a program of teaching, research and service. Students are instilled with the Jesuit ideals of concern for the spiritual, emotional and physical development of the individual as well as a lifelong commitment to leadership in the advancement of their personal skills and profession.

## Degrees Offered

### Degrees Offered

Marquette University confers the degree of bachelor of science on students who have satisfactorily completed the following majors: athletic training, biomedical sciences, clinical laboratory science, exercise physiology and speech pathology and audiology. Students who successfully complete the honors program may receive an honors bachelor of science in these majors.

The degrees of master of science and doctor of philosophy are conferred through the Marquette University Graduate School. A master of science degree in speech-language pathology and a certificate in bilingual English-Spanish are offered by the Department of Speech Pathology and Audiology. A master of science and doctor of philosophy degree in Clinical and Translational Rehabilitation Health Science are offered through the Department of Physical Therapy. Biomedical sciences faculty participate in the doctoral specialization in neuroscience through the biological sciences graduate program. Details for these programs can be found in the Graduate Bulletin.

The college also offers a professional doctoral program in physical therapy and a professional master's degree in physician assistant studies. Upon successful completion of these programs, the degree of doctor of physical therapy or master of physician assistant studies is conferred. Details for these programs can be found later in this section.

### Majors/Minors Offered

The College of Health Sciences offers five undergraduate majors and two minors. Students majoring in any of the majors offered by the College of Health Sciences must be a resident in the college to complete the major and earn the corresponding degree. Majors in athletic training and exercise physiology are offered by the Program in Exercise Science in the Department of Physical Therapy. A major in biomedical sciences is offered through the Department of Biomedical Sciences. A major in clinical laboratory science is offered through the Department of Clinical Laboratory Science. A major in speech pathology and audiology is offered through the Department of Speech Pathology and Audiology. Minors in biomedical sciences and speech pathology and audiology are offered through the respective departments. Detailed information and major/minor requirements are outlined in the individual department sections.

### Pre-professional Health Studies

Pre-professional studies at Marquette, means pursuing a bachelor's degree with the intent to enroll in a professional school following graduation. Choosing a major in the College of Health Sciences is one way to prepare for a career in medicine, dentistry, forensics, chiropractic medicine, physical therapy, athletic training, physician assistant, occupational therapy, pharmacy, podiatry and optometry. The College of Health Sciences provides advising, career counseling, seminars and recommendations to help you with the professional school application process.

Course requirements may vary among institutions and across disciplines. Students should consult graduate and professional schools of interest to identify specific course requirements.

Students considering the Doctor of Physical Therapy or Master of Physician Assistant Studies programs must complete prerequisite courses at an accredited four-year educational institution.

## **Pre-dental Scholars Program**

The College of Health Sciences participates in the Pre-dental Scholars Program. More detailed information can be found in the university Special Programs (p. 31) section of this bulletin.

# Graduation Requirements

## Amount and Quality of Work

Candidates for a degree must earn the required number of credits for their major and a minimum number of quality points equal to twice the number of credit hours attempted at Marquette (C average). Students may earn credits but not quality points from another institution. All students must earn at least a C average in their Marquette work.

A student must earn a C or better in all the courses in their major. Courses completed with a grade of CD or D do not count toward the total hour requirement for a major or minor but do count toward the total number of credit hours for graduation. Students who receive a grade of CD or D in a course in their major or minor may choose to repeat the course and for certain majors, are required to repeat the course or otherwise establish proficiency in a manner designated by the department. Credit is never given twice for the same course. Students must consult the area of the bulletin of their chosen major and minor for specific graduation requirements.

Students must fulfill the University Core of Common Studies, college and major curriculum requirements and take elective courses within the number of credits required for graduation. Certain combinations of major and minor fields may require more than the minimum number of credits for graduation. Students should consult an adviser before selecting a major and an optional minor.

Applicants for graduation must submit an application to the college dean's office by the last day of advising week in the term prior to the term of graduation. (November for May and August graduates; March for December graduates.)

It is the responsibility of the student to know and fulfill all University Core of Common Studies, College of Health Sciences and major requirements.

## Academic Regulations

### Academic Dishonesty

The College of Health Sciences follows the university guidelines for cases of academic dishonesty that are defined in the university section of this bulletin. No level of appeal is available beyond the dean.

### Academic Load

The academic load of a student is measured by credit hours assigned to each course. The normal College of Health Sciences program varies from 15 to 18 credit hours per term. Request for permission to exceed 19 credit hours must have prior approval from the dean's office.

## Academic Regulations

Students in the College of Health Sciences are expected to comply with the academic requirements and regulations listed in the university section of this bulletin. To maintain good standing in the College of Health Sciences, students must maintain a cumulative grade point average of at least 2.000. A term GPA falling below 2.000 or insufficient progress toward degree completion in a semester may result in the student being placed on probation. All students on probation will be reviewed and subject to academic dismissal if the terms of probation are not met. In addition to the minimum GPA requirement to remain in the College of Health Sciences, certain majors have more stringent term and cumulative GPA requirements. Students must consult the area of the bulletin of their chosen major for major-specific academic regulations.

Students in the professional phase of the Doctoral of Physical Therapy or Master of Physician Assistant Studies programs must comply with the academic regulations listed in the Physical Therapy and Physician Assistant Student Handbook. The Physical Therapy and Physician Assistant Student Handbook is issued to students upon entering the professional phase of the curriculum.

### Advisers

Upon enrollment in the College of Health Sciences each student is assigned an adviser. The adviser will assist the student with course selection, sequencing of courses, academic matters related to their curriculum and career advising. It is the student's responsibility to monitor his/her own progress toward degree requirements.

### Attendance

Courses in the College of Health Sciences often include performance under the guidelines and supervision of faculty and staff in classroom, laboratory, clinic as well as on- and off-campus professional situations. Students are expected to attend all meetings of the courses in which they are registered. Any absence, regardless of the reason will prevent the student from getting the full benefit of the course. Each professor in the College of Health Sciences sets his/her course attendance policy within the guidelines of the University Attendance Policy (p. 62) , and provides it at the start of the semester in the course syllabus. It is the responsibility of each student to follow the attendance policy for the courses in which they are enrolled. College of Health Sciences course professors may submit a grade of WA for students with excessive absences, as defined in the attendance policy for a course.

## Background Checks, Drug Testing

Some degrees, majors and/or courses may require a student to submit to a criminal background check and/or drug testing. The results of those checks and/or tests may affect the student's eligibility to continue in that degree, major and/or course.

## CR/NC Option

For enrichment purposes, junior and senior students are given an option to elect one course per term (to a maximum of four courses) for which only a CR (credit) or NC (no-credit) is assigned.

Eligible courses include only true electives in the individual's program selected from offerings by other divisions of the university. Courses excluded are all those taken in fulfillment of the requirements of the core curriculum and all offerings in their specific major or minor.

## Grade Appeal Procedure

If the student feels that the scoring and/or grading of an individual quiz, examination or assignment is in error, she/he should call it to the attention of the instructor of the course immediately upon receipt of the grade.

A student may appeal a final grade received in a course if the student believes the grade to be in error. The student is expected to exhaust all possibilities of resolving the problem with the instructor. If this does not lead to resolution, the student may initiate, in writing, a formal appeal of the grade to the chairperson of the department. The student's written request must state the reason he/she believes the grade should be changed. The chairperson reserves the right to meet with the student and instructor separately and/or together. The chairperson will make a final decision regarding the grade appeal. The student can appeal the decision of the chairperson to the dean of the College of Health Sciences. No level of appeal is available beyond the dean. No formal request for a grade appeal will be given consideration if the request is submitted later than the final day officially scheduled for the removal of incomplete grades, approximately four weeks after the beginning of the academic term immediately following the term in which the grade was assigned.

## Independent Study Courses

Independent study courses (4995/7995) may be taken in the College of Health Sciences. The purpose of these courses is to provide an independent, guided study experience for qualified students. A student must be in good academic standing in the College of Health Sciences. The purpose of an independent study course is to allow the student to pursue topics and issues in a course and/or a legitimate course of study for which no regularly scheduled course is offered. Permission and approval is contingent on the approval of the research proposal, the faculty's willingness to accept the proposal and to work with the student for the duration of the course. All independent study courses must have written approval from the instructor, department chairperson and assistant dean.

## Summer Sessions Study Approvals

Students who plan to take courses in summer school at another institution are required to obtain the approval from the dean's office for such courses before the summer session begins. Approval will be based on course descriptions in the current bulletin of the college or university at which the courses will be attempted. The student is expected to present such information. If prior approval is not obtained,

there is no guarantee that credits earned or course(s) will be accepted or transferred by Marquette University.

## **Transfer Credit Policy**

The College of Health Sciences will grant credit for courses taken for a grade and completed with a C or better. Only credit will transfer, not grades. Courses completed on a quarter-hour system will be converted to semester credits, therefore reducing the total credits accepted. A Marquette equivalent will be specified for each transferable course. Courses awarded as 9290-9294 (lower-division) or 9390-9399 (upper-division) indicate courses that will transfer for which there is no discernible Marquette equivalent. These credits will count toward the degree however, they will not fulfill any requirement where a specific course number (i.e. ENGL 1001 Rhetoric and Composition 1 or BISC 1015 Principles of Human Anatomy and Physiology) has been indicated. Contact the college office with any questions or concerns regarding the transfer of credits.



## Department of Biomedical Sciences

**Chairperson:** *John R. Mantsch, Ph.D.*

Department of Biomedical Sciences website (<http://www.marquette.edu/chs/bisc/>)

The Marquette University Department of Biomedical Sciences offers a biomedical sciences major and minor area of study for undergraduate students interested in pursuing careers in or related to health care professions and offers graduate courses for the Ph.D. specialization in neuroscience. The primary purpose of the major and minor is to provide human-oriented courses in anatomical sciences, biochemistry, nutrition, microbiology, molecular biology, pathology, pharmacology and physiology. The course work will provide students with the opportunity to acquire the concepts, principles, facts, and terminology fundamental to all health care professions or to areas, which require health related knowledge.

## Graduation Requirements

Candidates for the baccalaureate degree must complete a minimum of 128 credit hours including the following requirements:

| Area   | Credit Hours |
|--|--------------|
| UCCS Requirements                              | 36-39        |
| Required Science Cognates                      | 17-25        |
| Medical Ethics and Health and Society Cognates | 4-6          |
| Major  | 30           |

### Core and Department Curriculum Requirements:

#### Diverse Cultures (DC)

|                        |   |
|------------------------|---|
| Any approved DC course | 3 |
| Total Credit Hours     | 3 |

#### Histories of Cultures and Societies (HCS)

|                         |   |
|-------------------------|---|
| Any approved HCS course | 3 |
| Total Credit Hours      | 3 |

#### Human Nature and Ethics (HNE)

|                    |                            |   |
|--------------------|----------------------------|---|
| PHIL 1001          | Philosophy of Human Nature | 3 |
| PHIL 2310          | Theory of Ethics           | 3 |
| Total Credit Hours |                            | 6 |

**Individual and Social Behavior (ISB)**

|                    |                    |   |
|--------------------|--------------------|---|
| PSYC 1001          | General Psychology | 3 |
| Total Credit Hours |                    | 3 |

**Literature and Performing Arts (LPA)**

|  |  |   |
|--|--|---|
| Any approved literature LPA course except the following: ARSC 2970, COMM 2100, MUSI 1020, MUSI 2420, THAR 1020 and any other non-literature LPA courses. |  | 3 |
| Total Credit Hours   |  | 3 |

**Mathematical Reasoning (MR)**

|   |  |     |
|---|--|-----|
| Any statistics course approved for UCCS MR: |  | 3-4 |
|---|--|-----|

|                    |   |     |
|--------------------|---|-----|
| MATH 1700          | Modern Elementary Statistics              |     |
| PSYC 2001          | Psychological Measurements and Statistics |     |
| SOCI 2060          | Social Statistics                         |     |
| Total Credit Hours |   | 3-4 |

**Rhetoric (R)**

|                                     |  |   |
|-------------------------------------|--|---|
| Any two approved Rhetoric courses:* |  | 6 |
| Total Credit Hours                  |  | 6 |

\* ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2 are recommended for pre-professional students.

**Science and Nature (SN)**

|   |  |   |
|---|--|---|
| Any required cognate (see below) approved for SN: |  | 3 |
| Total Credit Hours                                |  | 3 |

**Theology (T)**

|   |                          |   |
|---|--------------------------|---|
| THEO 1001                                     | Introduction to Theology | 3 |
| One additional approved UCCS Theology course: |                          | 3 |
| Total Credit Hours                            |                          | 6 |

**Required Science Cognates:**

All students are required to complete:

|  |  |       |
|--|--|-------|
| BIOL 1001  | General Biology 1  | 3     |
| BIOL 1002  | General Biology 2  | 3     |
| CHEM 1001  | General Chemistry 1  | 4     |
| CHEM 1002  | General Chemistry 2  | 4     |
| CHEM 2111  | Organic Chemistry 1  | 4     |
| or CHEM 2112                                     | Organic Chemistry 2  |       |
| or BISC 2050                                     | Organic Chemistry for the Health Sciences                                      |       |
| One of the following laboratory science courses: |  | 1-3   |
| BIOL 2001  | Principles of Biological Investigation   |       |
| CLLS 1010  | Concepts in Clinical Laboratory Medicine                                       |       |
| CLLS 3160  | Molecular Diagnostics: Laboratory Techniques                                   |       |
| PHTH 7525  | Kinesiology 1: The Upper Extremity (Only for students admitted to DPT program) |       |
| BISC 4165  | Microbiology Laboratory  |       |
| Total Credit Hours                               |  | 19-21 |

**Students who are interested in pursuing a professional or graduate education (i.e. pre-med, pre-dental) should take the following courses:**

|           |  |
|-----------|--|
| CHEM 2111 | Organic Chemistry 1                    |
| CHEM 2112 | Organic Chemistry 2                    |
| PHYS 1001 | General Physics 1                      |
| PHYS 1002 | General Physics 2                      |
| BIOL 2001 | Principles of Biological Investigation |
| MATH 1410 | Calculus for the Biological Sciences   |

**Required Health and Society Cognate (one course) and Medical Ethics (minimum 1 credit):**

One of the following Health and Society courses: 3

|           |  |
|-----------|--|
| BISC 2150 | Social Justice Issues in Health Science (can be used as a Health and Society Cognate or BISC elective, but not both) |
| CLLS 2060 | Public Health (can be used as a Health and Society Cognate or BISC elective, but not both)                           |

|   |   |     |
|---|---|-----|
| HEAL 1025   | Culture and Health (can be used as a Health and Society Cognate or UCCS DC requirement, but not both) |     |
| HEAL 2100   | Primary Health Care Concepts  |     |
| SOCI 3300   | Sociology of the Life Course  |     |
| SOCI 3500   | Culture, Health and Illness   |     |
| SOCI 3520   | Health Care Systems   |     |
| SOCI 3550   | Race, Gender and Medicine   |     |
| SOCI 3570   | Men, Masculinities and Health   |     |
| SOCI 4300   | Sociology of Aging  |     |
| SOWJ 1001   | Introduction to Social Welfare and Justice  |     |
| SPAN 3715   | Advanced Spanish for the Health Professions   |     |
| PHAS 7090   | Introduction to Clinical Medicine (for students admitted to MPA program)                              |     |
| One of the following medical ethics courses (minimum 1 credit): |   | 1-3 |
| PHIL 4336   | Applied Ethics for the Health Sciences  |     |
| PHIL 4335   | Biomedical Ethics   |     |
| THEO 4450   | Medical Ethics  |     |
| Total Credit Hours  |   | 4-6 |

## Academic Performance

All students must comply with the College of Health Sciences graduation requirements. Candidates for a degree must earn at least the minimum number of credits listed in their curriculum and a minimum GPA of 2.000. A student must earn a C or better in all major courses. Major courses completed with a CD or less do not count toward the total hour requirement for the major or minor but do count toward the total number of credit hours for graduation. A waiver request may be submitted by a student if a required BISC course taken in the senior year is completed with a CD or D grade, provided the student has completed at least 30 credits in the major with a C or better.

## Biomedical Sciences Major

The following courses (30 credits) are required for undergraduate students not admitted to the MPA, DPT or Pre-dental Scholars programs:

|           |                    |   |
|-----------|--------------------|---|
| BISC 2135 | Human Anatomy      | 4 |
| BISC 4145 | Human Physiology   | 4 |
| BISC 3115 | Human Microbiology | 3 |

|   |   |    |
|---|---|----|
| BISC 4120   | Pharmacology                                    | 3  |
| BISC 3150   | General Pathology                               | 3  |
| BISC 4160   | Molecular Pathology                             | 3  |
| BISC 3213   | Biochemistry                                    | 4  |
| or BISC 2070  | Biochemistry for the Health Professions         |    |
| or BIOL 4101  | Biochemistry and the Molecular Basis of Biology |    |
| Additional courses from the Biomedical Sciences Electives list below: |   | 6  |
| Total Credit Hours  |   | 30 |

**Biomedical Electives:** Additional courses must be selected from the following list to reach a total of 30 credits in the major.

|           |   |     |
|-----------|---|-----|
| BISC 1001 | Contemporary Issues in Biomedical Sciences (required course for all first semester freshman)                | 1   |
| BISC 1030 | Introduction to Dentistry   | 1   |
| BISC 2125 | Human Microanatomy  | 4   |
| BISC 2150 | Social Justice Issues in Health Science (can fulfill Health and Society Cognate or BISC elective, not both) | 3   |
| BISC 2173 | Principles of Human Embryology  | 3   |
| BISC 3110 | Nutritional Aspects of Health   | 3   |
| BISC 3112 | Head and Neck Anatomy   | 3   |
| BISC 3136 | Gross Anatomy for the Biomedical Sciences   | 2   |
| BISC 3340 | Human and Applied Medical Genetics  | 3   |
| BISC 3859 | Evolution   | 3   |
| BISC 4140 | Functional Neuroanatomy   | 3   |
| BISC 4165 | Microbiology Laboratory   | 1   |
| BISC 4931 | Topics in Biomedical Sciences   | 1-3 |
| BISC 4986 | Internship in Biomedical Sciences (Maximum 3 credits toward BISC major)                                     | 1-3 |
| BISC 4995 | Independent Study in Biomedical Sciences (Maximum 3 credits toward BISC major)                              | 1-6 |
| BIOL 2201 | Genetics  | 3   |
| BIOL 2301 | Cell Biology  | 3   |
| BIOL 3202 | Experimental Genetics   | 3   |
| BIOL 3302 | Experimental Cell Biology   | 3   |
| BIOL 3501 | Neurobiology  | 3   |

|           |   |   |
|-----------|---|---|
| BIOL 3502 | Experimental Neurobiology   | 3 |
| BIOL 3702 | Experimental Physiology   | 3 |
| BIOL 4102 | Experimental Molecular Biology  | 3 |
| BIOL 4806 | Immunobiology   | 3 |
| CLLS 2050 | Forensic Science  | 3 |
| CLLS 2060 | Public Health (can fulfill Health and Society Cognate or BISC elective, not both) | 3 |
| CLLS 3160 | Molecular Diagnostics: Laboratory Techniques                                      | 3 |
| PTH 7515  | Pathophysiology and Aging   | 4 |
| PTH 7558  | Neuroanatomy  | 4 |

A maximum of nine transfer credit hours can be applied toward the requirements for a major

## Curricula Information

### Typical Program for Biomedical Sciences Majors

| Freshman                      |       |                             |       |
|-------------------------------|-------|-----------------------------|-------|
| First Term                    | Hours | Second Term                 | Hours |
| ENGL 1001 (R)                 | 3     | ENGL 1002 or COMM 1100 (R)* | 3     |
| CHEM 1001                     | 4     | CHEM 1002                   | 4     |
| BIOL 1001 (SN)                | 3     | BIOL 1002                   | 3     |
| THEO 1001 (T)                 | 3     | PSYC 1001 (ISB)             | 3     |
| UCCS (HCS)                    | 3     | PHIL 1001                   | 3     |
| BISC 1001                     | 1     |                             |       |
|                               | 17    |                             | 16    |
| Sophomore                     |       |                             |       |
| First Term                    | Hours | Second Term                 | Hours |
| BISC 2135                     | 4     | PHIL 2310                   | 3     |
| CHEM 2111 or BISC 2050        | 2-4   | BISC 3213 or Elective       | 3-4   |
| BIOL 2001 (or Lab Course)**** | 3     | Statistics (MR)             | 3-4   |
| MATH 1410 (or elective)*      | 3     | Electives                   | 3     |
| Elective                      | 3     | CHEM 2112 or BISC 2070      | 3-4   |
|                               | 15-17 |                             | 15-18 |

| <b>Junior</b>                     |              |                          |              |
|-----------------------------------|--------------|--------------------------|--------------|
| <b>First Term</b>                 | <b>Hours</b> | <b>Second Term</b>       | <b>Hours</b> |
| PHYS 1001 (or elective)*          | 4            | PHYS 1002 (or elective)* | 4            |
| BISC 3115                         | 3            | BISC 4145                | 4            |
| Health and Society requirement*** | 3            | BISC 3150                | 3            |
| Elective                          | 3            | Electives                | 6            |
| UCCS LPA (Literature)             | 3            |                          |              |
|                                   | 16           |                          | 17           |
| <b>Senior</b>                     |              |                          |              |
| <b>First Term</b>                 | <b>Hours</b> | <b>Second Term</b>       | <b>Hours</b> |
| BISC 4160                         | 3            | BISC 4120                | 3            |
| BISC elective                     | 3            | BISC elective            | 3            |
| PHIL 4336                         | 1            | UCCS (T)                 | 3            |
| UCCS (DC)                         | 3            | Electives                | 7            |
| Elective                          | 6            |                          |              |
|                                   | 16           |                          | 16           |
| Total credit hours: 128-133       |              |                          |              |

\* Courses required for many post-graduate/professional programs

\*\* The biochemistry requirement can be satisfied by either BISC 2070 or BISC 3213 (4 cr) in spring of sophomore year or BISC 3213 (4 cr) or BIOL 4101 in fall of junior year.

\*\*\* BISC 2150, CLLS 2060, HEAL 1025, HEAL 2100, PSYC 3420, SOCI 2300, SOCI 3500, SOCI 3520, SOCI 3550, SOCI 3570, SOCI 4300 or SOWJ 100, SPAN 3715. Topics (4931) courses that relate to health and society may be approved on an individual basis. BISC 2150 and CLLS 2060 can fulfill either the Health and Society Cognate or BISC elective, but not both. HEAL 1025 can fulfill either the Health and Society Cognate or the UCCS Diverse Cultures requirement but not both.

\*\*\*\* The laboratory course requirement can be satisfied by either BIOL 2001, BISC 4165, CLLS 1010, CLLS 3160 or PHTH 7525 (for students admitted to the DPT program).

## Typical Program for Biomedical Sciences Majors - Pre-physician Assistant Students

| Freshman         |       |                            |       |                 |       |
|------------------|-------|----------------------------|-------|-----------------|-------|
| First Term       | Hours | Second Term                | Hours |                 |       |
| ENGL 1001 (R)    | 3     | ENGL 1002 or COMM 1100 (R) | 3     |                 |       |
| CHEM 1001        | 4     | CHEM 1002                  | 4     |                 |       |
| BIOL 1001 (SN)   | 3     | BIOL 1002                  | 3     |                 |       |
| UCCS (HCS)       | 3     | PSYC 1001 (ISB)            | 3     |                 |       |
| THEO 1001 (T)    | 3     | PHIL 1001                  | 3     |                 |       |
| BISC 1001        | 1     |                            |       |                 |       |
|                  | 17    |                            | 16    |                 |       |
| Sophomore        |       |                            |       |                 |       |
| First Term       | Hours | Second Term                | Hours |                 |       |
| Literature (LPA) | 3     | Elective                   | 3     |                 |       |
| CHEM 2111        | 4     | CHEM 2112                  | 4     |                 |       |
| BISC 2135        | 4     | PHIL 2310 (HNE)            | 3     |                 |       |
| Elective         | 3     | UCCS (T)                   | 3     |                 |       |
| UCCS DC          | 3     | Statistics (MR)            | 3-4   |                 |       |
|                  | 17    |                            | 16-17 |                 |       |
| Junior           |       |                            |       |                 |       |
| First Term       | Hours | Second Term                | Hours | Summer Term     | Hours |
| BISC 3213        | 4     | BISC 4145                  | 4     | PHAS 7090**     | 3     |
| BISC 4130        | 5     | PHTH 7558                  | 4     | PA Curriculum * |       |
| BISC 3110        | 3     | BISC 3150                  | 3     |                 |       |
| PHIL 4336        | 1     | BISC 7410                  | 4     |                 |       |
| PHAS 7040        | 1     | BISC 4165                  | 1     |                 |       |
| BISC 3340        | 3     | PHAS 7117 <sup>#</sup>     | 1-3   |                 |       |
|                  | 17    |                            | 17-19 |                 | 3     |
| Senior           |       |                            |       |                 |       |
| First Term       | Hours | Second Term                | Hours |                 |       |
| BISC 7120        | 4     | PA Curriculum *            |       |                 |       |



|                             |   |  |   |
|-----------------------------|---|--|---|
| PA Curriculum*              |   |  |   |
|                             | 4 |  | 0 |
| Total credit hours: 107-110 |   |  |   |

# For the 2011-12 academic year, PHAS 7117 Cultural Diversity in Health Care will be offered for 3 cr. and fulfill the UCCS Diverse Cultures (DC) requirement. Starting in the 2012-13 academic year, PHAS 7117 Cultural Diversity in Health Care will be offered for 1 cr. and will not fulfill the UCCS DC requirement. Students accepted to PA starting with the 2012-13 academic year must fulfill the UCCS DC requirement before entering the PA curriculum.

\* See PA section of the Bulletin (<https://bulletin.marquette.edu/healthscienceprofessional/departmentofphysicianassistantstudies/#curriculuminformation>). PA courses will fulfill remaining elective requirements to complete 128 credits required for the B.S. degree.

\*\* Fulfills BISC Health and Society Cognate

## Typical Program for Biomedical Sciences Majors - Direct Admit Physical Therapy Students

| Freshman         |       |                            |       |
|------------------|-------|----------------------------|-------|
| First Term       | Hours | Second Term                | Hours |
| BIOL 1001 (SN)   | 3     | BIOL 1002                  | 3     |
| CHEM 1001        | 4     | CHEM 1002                  | 4     |
| ENGL 1001 (R)    | 3     | ENGL 1002 or COMM 1100 (R) | 3     |
| THEO 1001 (T)    | 3     | PSYC 1001 (ISB)            | 3     |
| Elective         | 3     | PHIL 1001                  | 3     |
| BISC 1001        | 1     |                            |       |
|                  | 17    |                            | 16    |
| Sophomore        |       |                            |       |
| First Term       | Hours | Second Term                | Hours |
| BISC 2050        | 2     | BISC 2070                  | 3     |
| UCCS (HCS)       | 3     | Elective                   | 6     |
| Literature (LPA) | 3     | PHTH 1001*                 | 1     |
| Elective         | 9     | Statistics (MR)***         | 3-4   |
|                  |       | PHIL 2310 (HNE)            | 3     |
|                  | 17    |                            | 16-17 |

| <b>Junior</b>                 |       |                                   |       |
|-------------------------------|-------|-----------------------------------|-------|
| First Term                    | Hours | Second Term                       | Hours |
| PHYS 1001                     | 4     | PHYS 1002                         | 4     |
| BISC 3115                     | 3     | BISC 4145                         | 4     |
| BISC elective (Min. 1 credit) | 1-3   | BISC 3150                         | 3     |
| Elective                      | 5     | Health and Society Requirement ** | 3     |
| UCCS (T)                      | 3     | PHIL 4336                         | 1     |
|                               | 16-18 |                                   | 15    |
| <b>Senior</b>                 |       |                                   |       |
| First Term                    | Hours | Second Term                       | Hours |
| PHTH 7512 (DC)                | 3     | PHTH 7530                         | 2     |
| BISC 4130                     | 5     | PHTH 7528                         | 2     |
| PHTH 7503                     | 3     | PHTH 7515                         | 4     |
| PHTH 7513                     | 3     | PHTH 7525                         | 3     |
| BISC 4160                     | 3     | BISC 4120                         | 3     |
|                               | 17    |                                   | 14    |
| Total credit hours: 128-131   |       |                                   |       |

\* Students who are not direct admit PT students are not required to complete PHTH 1001

\*\* BISC 2150, CLLS 2060, HEAL 1025, HEAL 2100, PSYC 3420, SOCI 2300, SOCI 3500, SOCI 3550, SOCI 3550, SOCI 3570, SOCI 4300 or SOWJ 1001, SPAN 3715. Topics (4931) courses that relate to health and society may be approved on an individual basis. BISC 2150 and CLLS 2060 can be used to fulfill the Health and Society Cognate or BISC electives, but not both. HEAL 1025 can be used to fulfill the Heal and Society Cognate or the UCCS Diverse Cultures requirement but not both.

\*\*\* Any statistics course approved for math requirement of the UCCS

## Typical Program for Biomedical Sciences Majors - Pre-dental Scholars

| <b>Freshman</b> |       |               |       |
|-----------------|-------|---------------|-------|
| First Term      | Hours | Second Term   | Hours |
| ENGL 1001 (R)   | 3     | ENGL 1002 (R) | 3     |
| CHEM 1001       | 4     | CHEM 1002     | 4     |

|                                 |              |                        |              |
|---------------------------------|--------------|------------------------|--------------|
| BIOL 1001 (SN)                  | 3            | BIOL 1002              | 3            |
| UCCS (HCS)                      | 3            | PSYC 1001 (ISB)        | 3            |
| THEO 1001 (T)                   | 3            | BISC 1030              | 1            |
| BISC 1001                       | 1            | PHIL 1001              | 3            |
|                                 | 17           |                        | 17           |
| <b>Sophomore</b>                |              |                        |              |
| <b>First Term</b>               | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |
| CHEM 2111                       | 4            | CHEM 2112              | 4            |
| MATH 1410                       | 3            | PHIL 2310 (HNE)        | 3            |
| BIOL 2001                       | 3            | BISC 2070              | 3            |
| Elective                        | 3            | BISC 4145              | 4            |
| UCCS (DC)                       | 3            | Elective               | 3            |
|                                 | 16           |                        | 17           |
| <b>Junior</b>                   |              |                        |              |
| <b>First Term</b>               | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |
| PHIL 4336                       | 1            | BISC 4120              | 3            |
| Health and Society Requirement* | 3            | UCCS (T)               | 3            |
| Literature (LPA)                | 3            | BISC 3150              | 3            |
| BISC 4160                       | 3            | Statistics (MR)**      | 3-4          |
| PHYS 1001                       | 4            | PHYS 1002              | 4            |
| Elective                        | 3            |                        |              |
|                                 | 17           |                        | 16-17        |
| <b>Senior</b>                   |              |                        |              |
| <b>First Term</b>               | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |
| BISC 7514                       | 4            | BISC 7410              | 4            |
| Clinical curriculum***          |              | BISC 7515 or 7516      | 3            |
|                                 |              | Clinical curriculum*** |              |
|                                 | 4            |                        | 7            |
| Total credit hours: 111-112     |              |                        |              |

\* BISC 2150, CLLS 2060, HEAL 1025, HEAL 2100, PSYC 3420, SOCI 2300, SOCI 3500, SOCI 3520, SOCI 3550, SOCI 3570, SOCI 4300 or SOWJ 1001, SPAN 3715. Topics (4931) courses that relate to health and society may be approved on an individual basis. BISC 2150 and CLLS 2060 can be used to fulfill either the Health and Society Cognate or BISC elective, but not both. HEAL 1025 can be used to fulfill the Health and Society Cognate or the UCCS Diverse Cultures requirement, but not both.

\*\* Any statistics course approved for math requirement of the UCCS

\*\*\* Clinical curriculum credits in D1 year will apply toward the 128 total credits required for the B.S. degree.

## Biomedical Sciences Minor

Choose any of the following courses for a total of 18 credits:

|           |   |   |
|-----------|---|---|
| BISC 1030 | Introduction to Dentistry                     | 1 |
| BISC 1060 | Chemistry for the Health Professions          | 3 |
| BISC 2070 | Biochemistry for the Health Professions       | 3 |
| BISC 2125 | Human Microanatomy                            | 4 |
| BISC 2135 | Human Anatomy                                 | 4 |
| BISC 2150 | Social Justice Issues in Health Science       | 3 |
| BISC 2173 | Principles of Human Embryology                | 3 |
| BISC 3110 | Nutritional Aspects of Health                 | 3 |
| BISC 3112 | Head and Neck Anatomy                         | 3 |
| BISC 3115 | Human Microbiology                            | 3 |
| BISC 3150 | General Pathology                             | 3 |
| BISC 3213 | Biochemistry                                  | 4 |
| BISC 3340 | Human and Applied Medical Genetics            | 3 |
| BISC 3859 | Evolution                                     | 3 |
| BISC 4120 | Pharmacology                                  | 3 |
| BISC 4130 | Human Gross Anatomy (PA and PT students only) | 5 |
| BISC 4140 | Functional Neuroanatomy                       | 3 |
| BISC 4145 | Human Physiology                              | 4 |
| BISC 4160 | Molecular Pathology                           | 3 |
| BISC 4165 | Microbiology Laboratory                       | 1 |

|           |  |   |
|-----------|--|---|
| BISC 4931 | Topics in Biomedical Sciences            | 1-3   |
| BISC 4995 | Independent Study in Biomedical Sciences | Maximum of 3 credits applied toward the minor 1-6 |
| CLLS 1010 | Concepts in Clinical Laboratory Medicine | 3   |

A maximum of nine transfer credit hours can be applied toward the requirements for a minor

For students in **non-science majors** interested in pursuing a minor in biomedical sciences, it is strongly recommended that BIOL 1001 General Biology 1 is completed for the UCCS Science and Nature requirement. BISC 1060 Chemistry for the Health Professions (a fall semester course) and BISC 2070 Biochemistry for the Health Professions (a spring semester course) should be the first BISC minor courses completed. These two BISC minor courses fulfill the chemistry and biochemistry prerequisites for most other BISC minor courses.

## Department of Clinical Laboratory Science

**Chairperson: Linda J. Laatsch, Ph.D., MT(ASCP) SM**

*Department of Clinical Laboratory Science website*

The Department of Clinical Laboratory Science educates persons who will be highly skilled in laboratory medicine and who will possess those professional qualities necessary for the practice of clinical laboratory science. It qualifies them to be employed as clinical laboratory scientists (medical technologists) in hospital laboratories, clinics, physicians' offices, research and teaching laboratories, as well as in biological and pharmaceutical companies, industry and public health bureaus. The course work provides the foundations necessary for individuals to develop administrative and teaching skills, as well as qualify for medical and graduate schools.

The Clinical Laboratory Science major is an integrated four-year curriculum leading to a bachelor of science degree. The first three years are spent on campus. The first nine weeks of the fourth year are spent on campus while the remainder of the senior year is spent at a clinical site. Marquette University admits no more students in the major than can be accommodated during the senior year. Students are assigned to the clinical affiliation by a matching process using student preference, hospital preference and a ranking by lottery.

### Accreditation

The Clinical Laboratory Science Program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences; 5600 N. River Road, Suite 720; Rosemont, IL 60631; (773) 714-8880. Upon successful completion of the course work, students are eligible for the appropriate certification and/or licensure examinations. The university assumes no responsibility for the success of its students in obtaining professional certification or other types of professional licensure.

### Admission Requirements

Applicants to the Department of Clinical Laboratory Science are expected to fulfill the university admission requirements. In addition to these, they must have had two laboratory sciences, one of which must be chemistry. Three years of advanced high school mathematics and high school physics are recommended. Marquette University accepts freshman students for August and January enrollment, but students enrolling in clinical laboratory science are urged to begin college in the fall because of scheduling difficulties inherent in mid-year admission.

Certain essential functions represent the non-academic requirements of the program that a student must possess to successfully complete the program and become employable. These include the ability to distinguish colors, the ability to learn to perform and interpret highly complex testing methods, the ability to disseminate information in an accurate and confidential manner and the ability to become a competent phlebotomist. Students must have good tactile skills, possess adequate physical and emotional health to work under stress and demonstrate respect and care for others.

### Admission with Advanced Standing and Transfer within the University

For students applying for admission with advanced standing from another institution or as transfers from within the university, the general university regulations apply.

Ordinarily, the following courses are not accepted from other institutions:

|           |  |   |
|-----------|--|---|
| CLLS 1010 | Concepts in Clinical Laboratory Medicine | 3 |
| CLLS 3124 | Medical Bacteriology                     | 4 |
| CLLS 3127 | Medical Microbiology                     | 4 |
| CLLS 3140 | Laboratory Instrumentation               | 3 |
| CLLS 3173 | Analytical and Clinical Chemistry        | 4 |
| CLLS 3174 | Clinical Hematology 1                    | 4 |

Due to the nature of the content of the following courses, a student who has already completed these courses must repeat them if five or more years will have lapsed between the time the course was completed and the date of enrollment in the senior year.

|           |   |   |
|-----------|---|---|
| BISC 2070 | Biochemistry for the Health Professions | 3 |
| BISC 3213 | Biochemistry                            | 4 |
| CLLS 3124 | Medical Bacteriology                    | 4 |
| CLLS 3127 | Medical Microbiology                    | 4 |

Ordinarily, the following must be taken during the year immediately preceding the senior year:

|           |                                   |   |
|-----------|-----------------------------------|---|
| CLLS 3124 | Medical Bacteriology              | 4 |
| CLLS 3127 | Medical Microbiology              | 4 |
| CLLS 3140 | Laboratory Instrumentation        | 3 |
| CLLS 3173 | Analytical and Clinical Chemistry | 4 |
| CLLS 3174 | Clinical Hematology 1             | 4 |

Applicants who are Certified Laboratory Assistants or Medical Laboratory Technicians are expected to complete all pre-senior course requirements or their equivalent. Credits can be transferred only if the institution from which the student received her/his training is accredited by appropriate accrediting agencies. Credits from junior colleges may not exceed one-half the number of credit hours required for graduation from the four-year curriculum at Marquette. Each individual applicant with previous laboratory training will be evaluated to determine whether or not any credit will be granted for clinical work completed in their previous training program.

The classification of advanced standing or transfer student does not depend upon the total number of credit hours the student has earned but rather upon the number of courses that a student must complete prior to the senior year. Only those courses that directly apply to the bachelor of science degree are used in determining the student's classification. However, the student record in the computer database will reflect all course work transferred.

The number of students admitted with advanced standing or as transfers with any classification depends upon available openings in the class for which the applicant qualifies.

Advanced standing or transfer students are never accepted for admission to the senior year only.

## Admission as a Special Student in Clinical Laboratory Science

Students who are not in the Department of Clinical Laboratory Science may be permitted to take clinical laboratory science courses. Clinical laboratory scientists who are certified and/or licensed by an appropriate agency may enroll in certain components of the senior year.

Requests for permission to take these courses must be made to the Department of Clinical Laboratory Science chair. If permission is granted, the student must then make application to the university as a special student in the Department of Clinical Laboratory Science. The regular tuition is charged for these courses.

## Degree Requirements

Students in Clinical Laboratory Science must fulfill the non-science requirements, which are stated in the bulletin issued for the year they entered the university. They must fulfill the current science, mathematics and pre-senior clinical laboratory science course requirements in effect as prerequisites for their senior year. Candidates for the baccalaureate degree in Clinical Laboratory Science must complete a minimum of 128 credit hours including the following requirements:

### Core Curriculum Requirements

Students majoring in Clinical Laboratory Science must complete a minimum of 37 semester hours of core curriculum requirements. The University Core of Common Studies (UCCS) curriculum is included in the Clinical Laboratory Science (CLS) Core Curriculum requirements.

#### Core and Department Curriculum Requirements:

#### Rhetoric (R)

|                                     |   |
|-------------------------------------|---|
| Any approved UCCS Rhetoric courses* | 6 |
| Total Credit Hours                  | 6 |

\* ENGL 1001 Rhetoric and Composition 1 and ENGL 1002 Rhetoric and Composition 2 are recommended for pre-professional students.

#### Mathematical Reasoning (MR)

|                    |                              |   |
|--------------------|------------------------------|---|
| MATH 1700          | Modern Elementary Statistics | 3 |
| Total Credit Hours |                              | 3 |

#### Diverse Cultures (DC)

|                             |   |
|-----------------------------|---|
| Any approved UCCS DC course | 3 |
| Total Credit Hours          | 3 |



**Histories of Cultures and Societies (HCS)**

|                              |   |
|------------------------------|---|
| Any approved UCCS HSC course | 3 |
| Total Credit Hours           | 3 |

**Individual and Social Behavior (ISB)**

|                              |   |
|------------------------------|---|
| Any approved UCCS ISB course | 3 |
| Total Credit Hours           | 3 |

**Literature and Performing Arts (LPA)**

|                              |   |
|------------------------------|---|
| Any approved UCCS LPA course | 3 |
| Total Credit Hours           | 3 |

**Science and Nature (SN)**

|                    |                   |   |
|--------------------|-------------------|---|
| BIOL 1001          | General Biology 1 | 3 |
| Total Credit Hours |                   | 3 |

**Human Nature and Ethics (HNE)**

|                                |  |   |
|--------------------------------|--|---|
| PHIL 1001                      | Philosophy of Human Nature             | 3 |
| PHIL 2310                      | Theory of Ethics                       | 3 |
| PHIL 4336                      | Applied Ethics for the Health Sciences | 1 |
| or other medical ethics course |  |   |
| Total Credit Hours             |  | 7 |

**Theology (T)**

|  |                          |   |
|--|--------------------------|---|
| THEO 1001                                    | Introduction to Theology | 3 |
| One additional approved UCCS Theology course |                          | 3 |
| Total Credit Hours                           |                          | 6 |

## General Degree Regulations

### Academic Regulations

Students in the Department of Clinical Laboratory Science are expected to comply with the academic requirements and regulations listed in the University section of this bulletin. Amplifications and additions to these requirements are detailed herein and govern only those students enrolled in the Department of Clinical Laboratory Science. Course requirements and regulations are subject to change on an annual basis and depend upon the demands of the profession. Students are subject to these changes regardless of the date of their matriculation in the major.

### Residency Requirement

Clinical laboratory science students must spend the term immediately preceding the senior year in residency (attend as a full-time student). Ordinarily this is the second term of the junior year during which the student must take:

|           |                            |   |
|-----------|----------------------------|---|
| CLLS 3127 | Medical Microbiology       | 4 |
| CLLS 3140 | Laboratory Instrumentation | 3 |
| CLLS 3174 | Clinical Hematology 1      | 4 |

### Professional Regulations

In addition to being evaluated through the use of written examinations and assignments, class participation and practical examinations, clinical laboratory science students are also evaluated with respect to their professional qualities. The instructors in most clinical laboratory science courses complete a written evaluation of each student.

During the senior year students are subject to the rules and regulations of the affiliating unit to which they are assigned.

### Scholastic Regulations

#### Essential Courses

There are certain cognate courses, the subject matter of which is deemed essential to the understanding of clinical laboratory science course work. Successful completion of subsequent courses is dependent upon the information learned in the prerequisite course(s). Therefore, grades of less than C in these "essential" courses are considered unacceptable to the fulfillment of the requirement. The following courses are included in this regulation:

|           |  |   |
|-----------|--|---|
| CHEM 1002 | General Chemistry 2                        | 4 |
| BISC 2070 | Biochemistry for the Health Professions    | 3 |
| BISC 3213 | Biochemistry                               | 4 |
| BISC 1015 | Principles of Human Anatomy and Physiology | 5 |
| BISC 4145 | Human Physiology                           | 4 |

Students must also achieve a grade of C or better in all the courses in their major.

To fulfill the degree requirements, major and essential courses (or their equivalent) in which unacceptable grades have been earned must be repeated or the student must demonstrate proficiency in the discipline by some other method as assigned by the promotions committee. Students who complete guided study (CLLS 1100 Guided Study in Clinical Laboratory Science) to establish proficiency are issued a grade of CR. A student will not normally be permitted to repeat more than two of these courses.

### **Junior and Senior Criteria**

To be classified as a junior in clinical laboratory science, students must meet the following criteria:

1. Completion of all lower division science, mathematics, and clinical laboratory science courses and at least 30 credit hours of humanities.
2. Attainment of a cumulative grade point average of 2.200 as well as a 2.000 in science, mathematics, and clinical laboratory science courses.

To be classified as a senior in clinical laboratory science, the following criteria must be met:

1. Completion of all requirements through junior year which are in effect for the particular class beginning the senior year regardless of when the student matriculated in the major.
2. Attainment of a cumulative grade point average of 2.200 as well as a grade point average of 2.000 in the required science, mathematics, and clinical laboratory science courses.

Students who fail to meet the criteria for junior and/or senior classification due to serious reasons but whose deficiencies are minimal and who have shown potential for success may appeal. If the promotions committee, upon review of the written appeal, grant admission with PROBATION status, the student must make up his/her deficiencies. These students do not necessarily participate in the matching process but are accepted by an affiliation through individual negotiation between the university department chair and the affiliation's program director.

### **Academic Actions**

Students who fail to maintain a C or a 2.000 cumulative grade point average are automatically warned on their grade reports. Their grade point average deficiency is calculated along with the grade point required in all future work to achieve the 2.000 required for graduation. For clinical laboratory science students, this action refers only to eligibility to continue at the university, rather than their eligibility to continue in the clinical laboratory science major. For requirements specific to students in clinical laboratory science, refer to the section on Scholastic Regulations.

Students who fail to comply with the rules and regulations of the department with respect to immunizations, health insurance, safety, honesty or whose conduct or health is unsatisfactory may be required to withdraw.

Students in the senior year who are in violation of the rules and regulations of the clinical facility are subject to dismissal from that facility. This action is under the jurisdiction of the authorities of that institution in consultation with the university department chair.

Students who fail to maintain progress necessary to meet the minimum requirements because of grade point average or excessive failure (F or U) grades are subject to review by the Academic Standards Committee, and they may be required to withdraw from the college.

During the senior year the academic actions taken are varied in severity dependent upon the scholastic and/or professional deficiency. These actions are the following: clinical censure, clinical warning and required to withdraw. The method of making up unacceptable grades during the senior year which have resulted in the issuing of an action of clinical censure or clinical warning will be determined by mutual agreement between the university department chair and the affiliation clinical program director. The Academic Standards Committee will prescribe, in writing, conditions under which these students will be allowed to continue. Students who do not meet the conditions thus stipulated will be required to withdraw.

## Attendance

In addition to the College of Health Sciences Absence Policy, the attendance policy for senior year is stipulated by the rules and regulations of each of the affiliations.

## Rules and Regulations

### Employment During the Senior Year

The rigors of the program are such that it is highly recommended that senior students not be employed except on weekends. Eight hours of employment on the weekends are considered to be the maximum that a senior student can be employed.

### Immunizations and Health Insurance

Prior to enrollment in the courses in medical microbiology, students are required to have appropriate immunizations and/or have tests to determine immune status. Students are not permitted to begin the senior year until they have presented evidence of adequate health insurance coverage.

### Study Abroad

Refer to the university Academic Programs section of the bulletin.

Clinical laboratory science students qualify for these programs. Usually science courses may not be taken during their studies abroad. Generally, study abroad will require additional time spent at the university beyond the usual four-year sequence.

### Special Regulations

Students who withdraw during the senior year, must, if readmitted, repeat the entire senior year. Due to the nature of clinical laboratory work, students may be required to attend sessions scheduled outside of the regularly scheduled class times. These sessions are scheduled with advance notice to the students.

In clinical laboratory science courses, a student who in any way acts dishonestly in class assignments or examinations shall be liable to dismissal from the department and being issued a grade of F.

For the safety of patients, peers and themselves, students are required to dress appropriately while attending clinical laboratory science sessions for all courses.

Senior students who wish to be excused from class for participation in athletics, band or chorus must have a grade point average of 2.600 to qualify for this privilege.

Senior students must have a criminal background check prior to beginning their clinical assignments. Some clinical sites may have requirements beyond those of the University (e.g. physical examination, drug testing, etc.). Seniors are expected to participate in the state clinical laboratory science conference.

## Facilities and Laboratories

The teaching laboratories on the university campus are structured to simulate a clinical setting and students have opportunities to experiment with modern technologies and diagnostic instrumentation.

The affiliating clinical laboratory sites are: ACL Laboratories, Blood Center of Wisconsin, Clement J. Zablocki VA Medical Center, Dynacare Laboratories, Froedtert Health Medical Group, Moreland Medical Center Laboratory, and Wheaton Franciscan Healthcare, Inc. All affiliations are located in the Milwaukee area.

## Clinical Laboratory Science Major

The following courses constitute the Clinical Laboratory Science major:

### Required Cognates:

|                           |  |   |
|---------------------------|--|---|
| BIOL 1002                 | General Biology 2  | 3 |
| BISC 2070<br>or BISC 3213 | Biochemistry for the Health Professions<br>Biochemistry        | 3 |
| BISC 1015<br>or BISC 4145 | Principles of Human Anatomy and Physiology<br>Human Physiology | 5 |
| CHEM 1001                 | General Chemistry 1  | 4 |
| CHEM 1002                 | General Chemistry 2  | 4 |
| CHEM 2111                 | Organic Chemistry 1  | 4 |

### Major Course Requirements:

|                    |  |    |
|--------------------|--|----|
| CLLS 1010          | Concepts in Clinical Laboratory Medicine                           | 3  |
| CLLS 3124          | Medical Bacteriology   | 4  |
| CLLS 3127          | Medical Microbiology   | 4  |
| CLLS 3140          | Laboratory Instrumentation   | 3  |
| CLLS 3160          | Molecular Diagnostics: Laboratory Techniques                       | 3  |
| CLLS 3173          | Analytical and Clinical Chemistry                                  | 4  |
| CLLS 3174          | Clinical Hematology 1  | 4  |
| CLLS 4180          | Basic Concepts in Clinical Education Methods & Practicum           | 1  |
| CLLS 4181          | Modern Management Concepts for the Clinical Laboratory & Practicum | 1  |
| CLLS 4183          | Clinical Chemistry and Practicum                                   | 6  |
| CLLS 4184          | Clinical Hematology 2 and Practicum                                | 4  |
| CLLS 4185          | Clinical Hemostasis and Practicum                                  | 3  |
| CLLS 4186          | Clinical Immunohematology and Practicum                            | 6  |
| CLLS 4187          | Clinical Immunology and Serology and Practicum                     | 2  |
| CLLS 4188          | Clinical Microbiology and Practicum                                | 6  |
| CLLS 4189          | Clinical Urinology and Practicum                                   | 2  |
| Total Credit Hours |  | 56 |

**General Electives - 12 credits**

Students may choose from any university offerings to earn a total of 12 credits of general electives. Upon arrival at Marquette University the student's adviser will work out a program that is best suited to the needs of the student. The science requirements are subject to revision.

**Typical Program for Clinical Laboratory Science Majors**

| Freshman        |       |                            |       |             |       |
|-----------------|-------|----------------------------|-------|-------------|-------|
| First Term      | Hours | Second Term                | Hours |             |       |
| BIOL 1001 (SN)* | 3     | BIOL 1002**                | 3     |             |       |
| CHEM 1001       | 4     | CHEM 1002                  | 4     |             |       |
| CLLS 1100       | 0     | ENGL 1002 or COMM 1100 (R) | 3     |             |       |
| ENGL 1001 (R)   | 3     | MATH 1700                  | 3     |             |       |
| UCCS (ISB)      | 3     | Elective                   | 3     |             |       |
| Elective        | 3     |                            |       |             |       |
|                 | 16    |                            | 16    |             |       |
| Sophomore       |       |                            |       |             |       |
| First Term      | Hours | Second Term                | Hours |             |       |
| CHEM 2111       | 4     | BISC 2070 (**)             | 3     |             |       |
| CLLS 1010*      | 3     | BISC 1015                  | 5     |             |       |
| UCCS (HCS)      | 3     | UCCS (LPA)                 | 3     |             |       |
| PHIL 1001 (HNE) | 3     | PHIL 2310 (HNE)            | 3     |             |       |
| THEO 1001 (T)   | 3     |                            |       |             |       |
|                 | 16    |                            | 14    |             |       |
| Junior          |       |                            |       |             |       |
| First Term      | Hours | Second Term                | Hours | Summer Term | Hours |
| CLLS 3124*      | 4     | CLLS 3127** +              | 4     | CLLS 3173   | 4     |
| CLLS 3160*      | 3     | CLLS 3140** +              | 3     |             |       |
| UCCS (DC)       | 3     | CLLS 3174** +              | 4     |             |       |
| UCCS (T)        | 3     | PHIL 4336                  | 1     |             |       |
| Elective        | 3     | Elective                   | 3     |             |       |
|                 | 16    |                            | 15    |             | 4     |

| <b>Senior</b>           |              |                    |              |  |
|-------------------------|--------------|--------------------|--------------|--|
| <b>First Term</b>       | <b>Hours</b> | <b>Second Term</b> | <b>Hours</b> |  |
| CLLS 4180               | 1            | CLLS 4186          | 6            |  |
| CLLS 4181               | 1            | CLLS 4187          | 2            |  |
| CLLS 4183               | 6            | CLLS 4188          | 6            |  |
| CLLS 4184               | 4            | CLLS 4189          | 2            |  |
| CLLS 4185               | 3            |                    |              |  |
|                         | 15           |                    | 16           |  |
| Total credit hours: 128 |              |                    |              |  |

The senior year (clinical phase) consists of 38 consecutive weeks usually beginning with Summer Session.

\* Offered only in the Fall semester of each academic year.

\*\* Offered only in the Spring semester of each academic year.

+ Must be taken in the semester immediately preceding the clinical phase.

## Typical Program for Clinical Laboratory Science Majors - Pre-medical

| <b>Freshman</b>   |              |                         |              |  |
|-------------------|--------------|-------------------------|--------------|--|
| <b>First Term</b> | <b>Hours</b> | <b>Second Term</b>      | <b>Hours</b> |  |
| BIOL 1001 (SN)*   | 3            | BIOL 1002**             | 3            |  |
| CHEM 1001         | 4            | CHEM 1002               | 4            |  |
| CLLS 1100         | 0            | ENGL 1002 (R)           | 3            |  |
| UCCS (DC)         | 3            | UCCS (ISB)              | 3            |  |
| ENGL 1001 (R)     | 3            | MATH 1700 (MR)          | 3            |  |
| UCCS (HCS)        | 3            |                         |              |  |
|                   | 16           |                         | 16           |  |
| <b>Sophomore</b>  |              |                         |              |  |
| <b>First Term</b> | <b>Hours</b> | <b>Second Term</b>      | <b>Hours</b> |  |
| CHEM 2111         | 4            | BIOL 2001 (or elective) | 3            |  |
| CLLS 1010*        | 3            | CHEM 2112               | 4            |  |

|                         |              |                          |              |                    |
|-------------------------|--------------|--------------------------|--------------|--------------------|
| PHIL 1001 (HNE)         | 3            | UCCS (LPA)               | 3            |                    |
| PHYS 1001               | 4            | PHYS 1002                | 4            |                    |
| THEO 1001 (T)           | 3            | PHIL 2310 (HNE)          | 3            |                    |
|                         | 17           |                          | 17           |                    |
| <b>Junior</b>           |              |                          |              |                    |
| <b>First Term</b>       | <b>Hours</b> | <b>Second Term</b>       | <b>Hours</b> | <b>Summer Term</b> |
| BISC 3213 <sup>+</sup>  | 4            | BISC 4145                | 4            | CLLS 3173          |
| CLLS 3124 <sup>+</sup>  | 4            | CLLS 3127 <sup>**+</sup> | 4            |                    |
| CLLS 3160 <sup>+</sup>  | 3            | CLLS 3140 <sup>**+</sup> | 3            |                    |
| PHIL 4336               | 1            | CLLS 3174 <sup>**+</sup> | 4            |                    |
| UCCS (T)                | 3            |                          |              |                    |
|                         | 15           |                          | 15           | 4                  |
| <b>Senior</b>           |              |                          |              |                    |
| <b>First Term</b>       | <b>Hours</b> | <b>Second Term</b>       | <b>Hours</b> |                    |
| CLLS 4180               | 1            | CLLS 4186                | 6            |                    |
| CLLS 4181               | 1            | CLLS 4187                | 2            |                    |
| CLLS 4183               | 6            | CLLS 4188                | 6            |                    |
| CLLS 4184               | 4            | CLLS 4189                | 2            |                    |
| CLLS 4185               | 3            |                          |              |                    |
|                         | 15           |                          | 16           |                    |
| Total credit hours: 131 |              |                          |              |                    |

\* Offered only in the Fall semester of each academic year.

\*\* Offered only in the Spring semester of each academic year.

+ Must be taken in the semester immediately preceding the clinical phase.



## Exercise Science

***Department of Physical Therapy Chairperson: Lawrence G. Pan, P.T., Ph.D., F.A.P.T.A***

Program in Athletic Training website (<http://www.marquette.edu/chs/athletic/index.shtml>)

Program in Exercise Physiology website (<http://www.marquette.edu/chs/exercise/>)

The Program in Exercise Science, which is located in the Department of Physical Therapy, offers undergraduate majors in athletic training (ATTR) and exercise physiology (EXPH).

## Direct Admit Physical Therapy

For incoming freshmen admitted to the Direct Admission Physical Therapy program, the ATTR/DPT and EXPH/DPT tracks allow students to begin the three-year DPT program in the senior year of undergraduate studies for a total of six years of study, instead of the usual seven years.

## Accelerated Degree Program (ADP)

The Program in Exercise Science offers early admission into its M.S. Program in Clinical and Translational Rehabilitation Health Science. Marquette undergraduate students majoring in Athletic Training or Exercise Physiology can apply for admission to this program in the second semester of their junior year. Students accepted into this program are eligible to enroll in up to 12 credits of Clinical and Translational Rehabilitation Health Sciences (CTRH) course work that carry graduate credit during their senior year. Credits obtained for these courses can be used to fulfill both undergraduate and graduate degree requirements. Once students inform the Graduate School of their completion of undergraduate degree requirements, their admission as a regular degree status (RDS) student in the graduate program is activated.

See Athletic Training (p. 746) section of this bulletin.

See Exercise Physiology (p. 758) section of this bulletin.

## Athletic Training

Athletic Training is an allied health profession whose mission is to enhance the quality of health care for the physical active through prevention, evaluation, management and rehabilitation of athletic injuries. Students wishing to become athletic trainers will receive an educational foundation in exercise and basic sciences as well as complete the required cognates for the National Athletic Training Association (NATA). To ensure a wide variety of practical experiences and expert clinical supervision, class size is limited. Applicants must meet specific admission and retention criteria

## Degree Offered

Marquette University confers the degree bachelor of science with a major in athletic training on those students who have successfully completed the required curricula.

## Accreditation

The athletic training major has been granted accredited status through the Commission on Accreditation of Athletic Training Education (CAATE). Students successfully graduating from this program are eligible to sit for the certification exam through the National Athletic Trainers' Association Board of Certification (NATABOC).

## Admission Requirements

Admission to the athletic training major can occur at two points in the academic sequencing, either direct admission as an incoming freshman or transfer admission.

The major is filled initially through **direct admission** by applicants applying in their senior year of high school. Direct admission decisions are made from a ranking of applicants based largely on their high school performance, standardized test scores and athletic training essay. The maximum number of students admitted to athletic training is limited as the program needs to provide adequate clinical supervision to each student. Once accepted by the university, students must provide a completed program physical form documenting compliance with the program's "Technical Standards" prior to full acceptance into the Athletic Training major. See the Athletic Training website (<http://www.marquette.edu/chs/athletic/admission.shtml>) for more information about admission and "Technical Standards".

Students at Marquette who were not admitted directly into the program can apply for **transfer admission** into the sophomore class. Transfer applicants are evaluated individually. The program will accept a minimum of 2 qualified transfer students into each sophomore class. Additional transfers into the athletic training major will only be considered if there are vacancies in the program created by previously accepted students transferring out of the major. Transfer students are accepted into the sophomore class of athletic training majors and will require three years to complete the required athletic training classes regardless of their previous academic standing.

To be considered for a transfer into the athletic training major, the student must meet the following criteria:

1. Must have a minimum of 2.750 GPA (cumulative)
2. Must document that they have observed in an athletic training setting, preferably at Marquette, for 30 hours.
3. Must have completed or be currently enrolled in and successfully completing the required freshman courses, which include:

|                    |  |    |
|--------------------|--|----|
| CHEM 1001          | General Chemistry 1                        | 4  |
| CHEM 1002          | General Chemistry 2                        | 4  |
| EXPH 1001          | Introduction to Exercise Physiology        | 2  |
| EXPH 1010          | Emergency Care, CPR and AED                | 2  |
| BISC 1015          | Principles of Human Anatomy and Physiology | 5  |
| EXPH 1050          | Surface Anatomy and Palpation              | 1  |
| ATTR 1020          | Prevention and Care of Athletic Injuries   | 2  |
| Total Credit Hours |  | 20 |

4. Must submit a signed Technical Standards form indicating their compliance with program technical standards. This must be verified with a completed program physical form prior to full acceptance into the major.

If a candidate meets the criteria he/she must then fill out the transfer application and file this with the Program Director of Athletic Training by March 1st prior to the fall in which they will join the sophomore class. Eligible candidates will be interviewed and admission decisions will be made prior to the end of the school year.

Transfer students from outside of Marquette University must meet with the program director to determine their present standing and the process for applying to the athletic training major.

## Professional Conduct and Academic Regulations

Students in the athletic training major are expected to adhere to the standards of conduct and professionalism set forth by the NATA and described in the student handbook. Professional behavior is vital to the success of every health care provider. To assist each student in developing and refining their professional behaviors, athletic training students regularly evaluated during the Clinical Proficiency courses and Athletic Training Practicum. Violations and/or major deficiencies may prevent students from receiving clinical assignments and may be grounds for academic probation or dismissal, as described in the Athletic Training Student Handbook.

## Academic Performance

Candidates for a degree must comply with the academic performance requirements described in the student handbook. Failure to meet these requirements will result in academic probation or dismissal from the program as described in the handbook. Students must earn a minimum cumulative GPA of 2.750. All students must comply with the College of Health Sciences graduation requirements. A student must earn a C or better in all major course requirements. Major courses completed with a CD or less count toward the total hour requirements, but do not fulfill graduation requirements. The class must be repeated prior to graduation from the athletic training major. The department will only allow those students who have satisfactorily completed all academic, technical and professional behavior requirements to attend a clinical affiliation or practicum. The program reserves the right to deny practicum placement to any student that has not satisfactorily met the requirements printed in the Athletic Training Student Handbook. Cancellation or delay of a practicum may result in delayed graduation.

## **Academic Limitations for Courses/Grades**

The Program in Exercise Science established the following policies with regard to grades, the use of the Substitute Repeat Option and the useful lifetime of courses:

### **Limit on the use of substitute repeat option**

Since the institution of the punitive F in May 1991, the university has implemented the use of the substitute repeat option whereby the new repeated course grade will be used in the computation of the GPA and the student will receive degree credit only once.

The Program in Exercise Science endorses the use of the substitute repeat option as a means to improve a student's GPA but limits its use to a maximum of five instances.

### **Limit on the number of W, UW and WA grades a student can receive in all courses**

Students are allowed to earn a maximum of five grades of W and a maximum of three grades of UW and/or WA.

### **Limit on the number of times a required named course in the student's program can be taken**

The Program in Exercise Science limits the times that a student can repeat any given named required course in their program to three times. This is measured by the number of times the student is officially registered for the course at close of late registration (i.e., the number of times the course appears on the student's transcript).

## **Examinations**

Final examinations are held in all subjects. A student's grade of scholarship in each subject is determined by the combined results of his or her class work, course assignments, and examinations as defined in the course syllabus. A student who misses a final examination in an ATTR or other course risks the loss of credit and the possibility of not being to enroll in subsequent ATTR and/or EXPH courses. Any student that misses a final exam in any course must file a written excuse with the College of Health Sciences office within 48 hours of the examination. Should the excuse be deemed valid, permission may be given for a delayed examination.

## **Certification in Basic Life Support**

Certification in basic life support that includes child, infant, and both one- and two-person adult CPR along with AED (automatic external defibrillation) training is required of all students. Certification may be obtained following successful completion of EXPH 1010. Continued certification must be maintained by and is the responsibility of the student. Students without current CPR with AED certification cannot participate in their clinical experience which may result in the failure of that experience and may delay graduation.

## Health Insurance/Health Certification

A program physical form must be completed by the student's physician or student health services prior to each academic year, as described in the student handbook. All students prior to clinical/practical experiences must present evidence of health insurance before clinical/internship assignment can be made. A chest X-ray, vaccinations, and TB screening may be required prior to clinical assignment as dictated by the specific site. Hepatitis B vaccination is recommended.

## Athletic Training and Doctor of Physical Therapy

A curriculum has been developed to accommodate prerequisites for entrance into the DPT while meeting the required course work for ATTR. Students that are either direct admit students or intend on applying to the DPT program must meet with a PT and ATTR advisers as soon as possible to discuss programmatic differences that are required to meet each program's requirements.

Students must be aware that some courses in the DPT curriculum can be substituted to complete the ATTR degree, allowing the completion of both programs in a total of 6 years. However, this will result in a one semester delay in graduation from the athletic training major. Students can participate in the May Commencement ceremonies following completion of year four and continue in the PT program without interruption. However, undergraduate diplomas will not be granted until December, after successful completion of the DPT5 Fall semester, which fulfills the final ATTR requirements. See curriculum for specifics.

## Degree Requirements

A minimum of 128 credit hours is required for the degree including the following requirements:

| Area              | Credit Hours |
|-------------------|--------------|
| UCCS Requirements | 34-37        |
| Required Cognates | 14           |
| Major             | 80           |

## UCCS and Program Curriculum Requirements for Athletic Training

Refer to the University Core of Common Studies (UCCS) for courses that will meet requirements, if not specified below.

UCCS Rhetoric (R) 6

|   |   |
|---|---|
| ENGL 1001   | Rhetoric and Composition 1                |
| ENGL 1002   | Rhetoric and Composition 2                |
| or COMM 1100  | Contemporary Presentation                 |
| UCCS Mathematics and Reasoning (MR) One of the following: |   |
| MATH 1700   | Modern Elementary Statistics              |
| PSYC 2001   | Psychological Measurements and Statistics |

|  |  |   |
|--|--|---|
| SOCI 2060                                    | Social Statistics  |   |
| UCCS Individual and Social Behaviors (ISB)   |  | 3 |
| PSYC 1001                                    | General Psychology   |   |
| UCCS Diverse Culture (DC)                    |  | 3 |
| Any UCCS DC approved course                  |  |   |
| UCCS Science and Nature (SN)                 |  | 3 |
| BIOL 1001                                    | General Biology 1  |   |
| UCCS History of Cultures and Societies (HCS) |  | 3 |
| Any UCCS HCS approved course                 |  |   |
| UCCS Theology (T)                            |  |   |
| THEO 1001                                    | Introduction to Theology   |   |
| One additional UCCS T approved course        |  |   |
| UCCS Literature and Performing Arts (LPA)    |  | 3 |
| Any UCCS LPA approved course                 |  |   |
| UCCS Human Nature and Ethics (HNE)           |  | 7 |
| PHIL 1001                                    | Philosophy of Human Nature   |   |
| PHIL 2310                                    | Theory of Ethics   |   |
| PHIL 4336                                    | Applied Ethics for the Health Sciences (or PHIL 4335 or THEO 4450, each for 3 credits) |   |

## Required Cognates for ATTR

|              |                                   |   |
|--------------|-----------------------------------|---|
| BIOL 1001    | General Biology 1                 | 3 |
| BIOL 1002    | General Biology 2                 | 3 |
| CHEM 1001    | General Chemistry 1               | 4 |
| CHEM 1002    | General Chemistry 2               | 4 |
| BISC 4120    | Pharmacology                      | 3 |
| or ATTR 4120 | Pharmacology in Athletic Training |   |

## Athletic Training Major

BISC 1015 Principles of Human Anatomy and Physiology and all ATTR and EXPH courses listed in the curriculum outlines that follow must be completed with a C grade or better (see the Academic Performance section).

Curricula have also been developed for those students interested in using Athletic Training as a pre-medical, pre-dental, pre-veterinary or pre-graduate school degree. Students are required to meet with an adviser to discuss programmatic differences based upon their unique circumstances.

## Typical Program for Athletic Training Majors

| <b>Freshman</b>                              |              |                            |              |
|--|--------------|----------------------------|--------------|
| <b>First Term</b>                            | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |
| ENGL 1001 (R)                                | 3            | ENGL 1002 or COMM 1100 (R) | 3            |
| CHEM 1001                                    | 4            | CHEM 1002                  | 4            |
| EXPH 1001                                    | 2            | BISC 1015                  | 5            |
| EXPH 1010                                    | 2            | ATTR 1020                  | 2            |
| BIOL 1001 (SN)                               | 3            | EXPH 1050                  | 1            |
|  |              | THEO 1001                  | 3            |
|  | 14           |                            | 18           |
| <b>Sophomore</b>                             |              |                            |              |
| <b>First Term</b>                            | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |
| EXPH 2115                                    | 5            | BIOL 1002                  | 3            |
| PSYC 1001 (ISB)                              | 3            | EXPH 2190                  | 3            |
| PHIL 1001 (HNE)                              | 3            | EXPH 2110                  | 4            |
| ATTR 2130                                    | 3            | ATTR 2131                  | 3            |
| UCCS (HCS)                                   | 3            | ATTR 2150                  | 2            |
| ATTR 2981                                    | 1            | ATTR 2982                  | 1            |
| ATTR 2201                                    | 0            | ATTR 2202                  | 0            |
|  | 18           |                            | 16           |
| <b>Junior</b>                                |              |                            |              |
| <b>First Term</b>                            | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |
| ATTR 3160                                    | 2            | ATTR 3170                  | 3            |
| ATTR 3203                                    | 0            | ATTR 3204                  | 0            |
| ATTR 3983                                    | 1            | ATTR 3984                  | 1            |
| UCCS (MR-statistics course)                  | 3            | EXPH 3180                  | 4            |
| UCCS (LPA)                                   | 3            | EXPH 2106                  | 3            |
| EXSC 3189 Nutrition and Exercise Performance | 4            | UCCS (T) or BISC 4120**    | 3            |

|   |              |                           |              |
|---|--------------|---------------------------|--------------|
| PHIL 2310 (HNE)                             | 3            | UCCS (DC)                 | 3            |
|   | 16           |                           | 17           |
| <b>Senior</b>                               |              |                           |              |
| <b>First Term</b>                           | <b>Hours</b> | <b>Second Term</b>        | <b>Hours</b> |
| ATTR 3985                                   | 1            | ATTR 4986 Practicum in AT | 14           |
| ATTR 4205                                   | 0            |                           |              |
| ATTR 4120 Pharmacology in AT or UCCS THEO** | 3            |                           |              |
| EXPH 3170                                   | 3            |                           |              |
| EXPH 4187                                   | 3            |                           |              |
| EXPH 4192                                   | 4            |                           |              |
| PHIL 4336                                   | 1            |                           |              |
|   | 15           |                           | 14           |
| Total credit hours: 128                     |              |                           |              |

\*\* ATTR students can complete either BISC 4120 Pharmacology in the spring term or ATTR 4120 Pharmacology in Athletic Training in the fall term.

## Typical Program for Athletic Training Majors - Direct Admit DPT

A curriculum has been developed to accommodate the prerequisites for entrance into the DPT while meeting the required course work for the athletic training major. Students that are either direct admit DPT students or intend on applying to the DPT program must meet with an adviser as soon as possible to discuss programmatic differences that are required to meet entrance standards. Students must be aware that all required courses must be completed prior to graduation.

|                   |              |                            |              |                    |              |
|-------------------|--------------|----------------------------|--------------|--------------------|--------------|
| <b>Freshman</b>   |              |                            |              |                    |              |
| <b>First Term</b> | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> | <b>Summer Term</b> | <b>Hours</b> |
| ENGL 1001 (R)     | 3            | ENGL 1002 or COMM 1100 (R) | 3            | UCCS (LPA)         | 3            |
| UCCS (HCS)        | 3            | PHIL 1001 (HNE)            | 3            |                    |              |
| CHEM 1001         | 4            | CHEM 1002                  | 4            |                    |              |
| EXPH 1001         | 2            | BISC 1015                  | 5            |                    |              |
| EXPH 1010         | 2            | ATTR 1020                  | 2            |                    |              |
| BIOL 1001 (SN)    | 3            | EXPH 1050                  | 1            |                    |              |
|                   | 17           |                            | 18           |                    | 3            |



| Sophomore                                    |       |                            |       |                            |       |
|--|-------|----------------------------|-------|----------------------------|-------|
| First Term                                   | Hours | Second Term                | Hours |                            |       |
| EXPH 2115                                    | 5     | BIOL 1002                  | 3     |                            |       |
| PHIL 2310 (HNE)                              | 3     | EXPH 2190                  | 3     |                            |       |
| THEO 1001 (T)                                | 3     | EXPH 2110                  | 4     |                            |       |
| ATTR 2130                                    | 3     | ATTR 2131                  | 3     |                            |       |
| ATTR 2981                                    | 1     | ATTR 2150                  | 2     |                            |       |
| ATTR 2201                                    | 0     | ATTR 2982                  | 1     |                            |       |
|  |       | PHTH 1001                  | 1     |                            |       |
|  |       | ATTR 2202                  | 0     |                            |       |
|  | 15    |                            | 17    |                            |       |
| Junior                                       |       |                            |       |                            |       |
| First Term                                   | Hours | Second Term                | Hours |                            |       |
| ATTR 3160                                    | 2     | ATTR 3170                  | 3     |                            |       |
| ATTR 3203                                    | 0     | EXPH 3180                  | 4     |                            |       |
| ATTR 3983                                    | 1     | ATTR 3984                  | 1     |                            |       |
| EXPH 3189 Nutrition and Exercise Performance | 4     | EXPH 2106                  | 3     |                            |       |
| PHYS 1001                                    | 4     | PHYS 1002                  | 4     |                            |       |
| UCCS (MR) Statistics                         | 3     | PHIL 4336                  | 1     |                            |       |
| UCCS (T)                                     | 3     | ATTR 3204                  | 0     |                            |       |
|  | 17    |                            | 16    |                            |       |
| Senior                                       |       |                            |       |                            |       |
| First Term                                   | Hours | Second Term                | Hours | Summer Term                | Hours |
| PHTH 7513 (for EXPH 3170)*                   | 3     | BISC 4120 (for ATTR 4120)* | 3     | PHTH 7504 (for ATTR 4986)* | 2     |
| BISC 4130                                    | 5     | PHTH 7515 (for EXPH 3187)* | 4     | DPT Curriculum             |       |
| BIOL 3701                                    | 4     | PHTH 7528                  | 2     |                            |       |
| PHTH 7503                                    | 3     | PHTH 7525                  | 3     |                            |       |
| PHTH 7512 (DC)                               | 3     | PHTH 7530                  | 2     |                            |       |
| ATTR 3985                                    | 1     | BISC 3150                  | 3     |                            |       |
|  | 19    |                            | 17    |                            | 2     |

| <b>DPT 5</b>                |              |  |  |
|-----------------------------|--------------|--|--|
| <b>First Term</b>           | <b>Hours</b> |  |  |
| PHTH 7518 (for EXPH 4192)*  | 3            |  |  |
| PHTH 7986 Internship in PT* | 4            |  |  |
| DPT Curriculum              |              |  |  |
|                             | 7            |  |  |
| Total credit hours: 148     |              |  |  |

- \* Students enrolled in the Doctor of Physical Therapy program will follow the curricula as established by the Physical Therapy Department. The curriculum includes courses in the fourth and fifth year of the DPT program that will substitute for required ATTR major courses (listed in parenthesis). Students can participate in the May Commencement ceremony with their class, however, diplomas and official transcripts will not be granted until satisfactory completion of the fall semester in the DPT5 year.

### Typical Program for Athletic Training Majors - Accelerated Degree Program/MS Non-Thesis

| <b>Freshman</b>   |              |                        |              |
|-------------------|--------------|------------------------|--------------|
| <b>First Term</b> | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |
| BIOL 1001         | 3            | ATTR 1020              | 2            |
| CHEM 1001         | 4            | BISC 1015              | 5            |
| ENGL 1001         | 3            | CHEM 1002              | 4            |
| EXPH 1001         | 2            | ENGL 1002 or COMM 1100 | 3            |
| EXPH 1010         | 2            | EXPH 1050              | 1            |
| THEO 1001         | 3            | PHIL 1001              | 3            |
|                   | 17           |                        | 18           |
| <b>Sophomore</b>  |              |                        |              |
| <b>First Term</b> | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |
| ATTR 2130         | 3            | ATTR 2131              | 3            |
| ATTR 2981         | 1            | ATTR 2150              | 2            |
| EXPH 2115         | 5            | ATTR 2982              | 1            |
| PSYC 1001         | 3            | BIOL 1002              | 3            |
| UCCS (LPA)        | 3            | EXPH 2110              | 4            |

|  |              |                            |              |
|--|--------------|----------------------------|--------------|
| UCCS (HCS/DC)                                | 3            | EXPH 2190                  | 3            |
|  | 18           |                            | 16           |
| <b>Junior</b>                                |              |                            |              |
| <b>First Term</b>                            | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |
| ATTR 3160                                    | 2            | ATTR 3170                  | 3            |
| ATTR 3983                                    | 1            | ATTR 3984                  | 1            |
| PHIL 2310                                    | 3            | BISC 4120                  | 3            |
| EXPH 3189 Nutrition and Exercise Performance | 4            | EXPH 2106                  | 3            |
| PHYS 1001                                    | 4            | EXPH 3180                  | 4            |
| UCCS (T)                                     | 3            | UCCS (MR) Statistics       | 3            |
|  | 17           |                            | 17           |
| <b>Senior</b>                                |              |                            |              |
| <b>First Term</b>                            | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |
| ATTR 3985                                    | 1            | BISC 5145*                 | 4            |
| EXPH 3170                                    | 3            | ATTR 4986 Practicum in AT  | 7            |
| EXPH 4187                                    | 3            | PHIL 4336                  | 1            |
| EXPH 4192                                    | 4            | CTRH TBD (RCR)*            | 0            |
| CTRH 6135*                                   | 4            | CTRH 6960 Seminar in CTRH* | 0            |
| CTRH 6020*                                   | 2            |                            |              |
| CTRH 6958*                                   | 1            |                            |              |
|  | 18           |                            | 12           |
| Total credit hours: 133                      |              |                            |              |

\* Courses (11 credits) taken in senior year that apply toward the CTRH graduate program.

### Typical Program for Athletic Training Majors - Accelerated Degree Program/MS Thesis

|                   |              |                    |              |
|-------------------|--------------|--------------------|--------------|
| <b>Freshman</b>   |              |                    |              |
| <b>First Term</b> | <b>Hours</b> | <b>Second Term</b> | <b>Hours</b> |
| BIOL 1001         | 3            | ATTR 1020          | 2            |
| CHEM 1001         | 4            | BISC 1015          | 5            |

|  |              |                            |              |
|--|--------------|----------------------------|--------------|
| ENGL 1001                                    | 3            | CHEM 1002                  | 4            |
| EXPH 1001                                    | 2            | ENGL 1002 or COMM 1100     | 3            |
| EXPH 1010                                    | 2            | EXPH 1050                  | 1            |
| THEO 1001                                    | 3            | PHIL 1001                  | 3            |
|  | 17           |                            | 18           |
| <b>Sophomore</b>                             |              |                            |              |
| <b>First Term</b>                            | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |
| ATTR 2130                                    | 3            | ATTR 2131                  | 3            |
| ATTR 2981                                    | 1            | ATTR 2150                  | 2            |
| EXPH 2115                                    | 5            | ATTR 2982                  | 1            |
| PSYC 1001                                    | 3            | BIOL 1002                  | 3            |
| UCCS (HCS/DC)                                | 3            | EXPH 2110                  | 4            |
| UCCS (LPA)                                   | 3            | EXPH 2190                  | 3            |
|  | 18           |                            | 16           |
| <b>Junior</b>                                |              |                            |              |
| <b>First Term</b>                            | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |
| ATTR 3160                                    | 2            | ATTR 3170                  | 3            |
| ATTR 3983                                    | 1            | ATTR 3984                  | 1            |
| PHIL 2310                                    | 3            | BISC 4120                  | 3            |
| EXPH 3189 Nutrition and Exercise Performance | 4            | EXPH 2106                  | 3            |
| PHYS 1001                                    | 4            | EXPH 3180                  | 4            |
| UCCS (T)                                     | 3            | UCCS (MR) Statistics       | 3            |
|  | 17           |                            | 17           |
| <b>Senior</b>                                |              |                            |              |
| <b>First Term</b>                            | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |
| ATTR 3985                                    | 1            | BISC 5145*                 | 4            |
| EXPH 3170                                    | 3            | ATTR 4986 Practicum in AT  | 7            |
| EXPH 4187                                    | 3            | PHIL 4336                  | 1            |
| EXPH 4192                                    | 4            | CTRH TBD (RCR)*            | 0            |
| CTRH 6020*                                   | 2            | CTRH 6960 Seminar in CTRH* | 0            |
| CTRH 6135*                                   | 4            | CTRH 6958*                 | 1            |

|                         |    |  |    |
|-------------------------|----|--|----|
| CTRH 6958*              | 1  |  |    |
|                         | 18 |  | 13 |
| Total credit hours: 134 |    |  |    |

\* Courses (12 credits) taken in senior year that apply toward the CTRH graduate program.

## Exercise Physiology

The Exercise Physiology major provides an academic program of liberal arts and basic sciences for the student interested in exercise physiology, fitness and health/wellness. The sequenced curriculum seeks to develop a graduate with the skills and academic background to pursue a career in the rapidly growing health and fitness industry. In addition, students are well prepared to pursue graduate work or professional education in a variety of areas including physical therapy, sports medicine, occupational therapy, medical school, etc. Incoming freshmen admitted to the Direct Admit Physical Therapy program and those applicants accepted to the physical therapy program in their junior year will follow a course sequence that allows them to begin the doctorate in physical therapy (DPT) in their senior year.

### Degree Offered

Marquette University confers the degree bachelor of science with a major in exercise physiology on those students who have satisfactorily completed the required curricula.

### Accreditation/Recognition

For successfully meeting established criteria, the National Strength and Conditioning Association (NSCA) officially recognizes Marquette University's Education Program in Strength and Conditioning through January 2015.

The exercise physiology Program in the Department of Physical Therapy at Marquette University in Wisconsin is the fourth academic institution in the United States to be recognized as an accredited academic program of study for exercise physiology by the American Society of Exercise Physiologists (ASEP). A ten-year accreditation was awarded from ASEP through September 2012.

### Academic Performance

Candidates for a degree must earn at least the minimum number of credits listed in their curriculum and a minimum GPA of 2.600. All students must comply with the College of Health Sciences graduation requirements. All students must carry a grade point average of 2.400 as a freshman, 2.600 as a sophomore through senior, based on a 4.0 system. A student should understand that a grade point average of 3.000 or better is required for admission consideration by most graduate programs. A student must earn a C or better in all major courses. Major courses completed with a CD or less count toward the total hour requirements, but do not fulfill graduation requirements and must be repeated prior to advancing in course sequence.

In addition to the above, the program expects its students to adhere to standards of conduct and professionalism. Professional behavior is vital to the success of every health care provider. Violations and/or major deficiencies may prevent students from receiving clinical assignments, may be grounds for dismissal, or other penalties.

### Academic Limitations for Courses/Grades

The Program in Exercise Science established the following policies with regard to grades, the use of the Substitute Repeat Option and the useful lifetime of courses:

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### **Limit on the use of substitute repeat option**

Since the institution of the punitive F in May 1991, the university has implemented the use of the substitute repeat option whereby the new repeated course grade will be used in the computation of the GPA and the student will receive degree credit only once.

The Program in Exercise Science endorses the use of the substitute repeat option as a means to improve a student's GPA but limits its use to a maximum of five instances.

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### **Limit on the number of W, UW and WA grades a student can receive in all courses**

Students are allowed to earn a maximum of five grades of W and a maximum of three grades of UW and/or WA.

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### **Limit on the number of times a required named course in the student's program can be taken**

The Program in Exercise Science limits the times that a student can repeat any given named required course in their program to three times. This is measured by the number of times the student is officially registered for the course at close of late registration (i.e., the number of times the course appears on the student's transcript).

## **Examinations**

Final examinations are held in all subjects. A student's grade of scholarship in each subject is determined by the combined results of his or her class work, course assignments, and examinations as defined in the course syllabus. A student who misses a final examination in an EXPH or other course risks the loss of credit and the possibility of not being able to enroll in subsequent EXPH courses. Any student that misses a final exam in any course must file a written excuse with the College of Health Sciences office within 48 hours of the examination. Should the excuse be deemed valid, permission may be given for a delayed examination.

## **Certification in Basic Life Support**

Certification in basic life support that includes child, infant, and both one- and two-person adult CPR along with AED (automatic external defibrillation) training is required of all students. Certification may be obtained following successful completion of EXPH 1010. Continued certification must be maintained by and is the responsibility of the student. Students without current CPR with AED certification cannot participate in their clinical experience which may result in the failure of that experience and may delay graduation.

## **Health Insurance/Health Certification**

All students prior to clinical/practical experiences must present evidence of health insurance before clinical/internship assignment can be made. A chest X-ray, vaccinations, and TB screening may be required prior to clinical assignment as dictated by the specific site. Hepatitis B vaccination is recommended.

## Exercise Physiology and Doctor of Physical Therapy

A curriculum has been developed to accommodate prerequisites for entrance into the DPT while meeting the required course work for EXPH. Students that are either direct admit students or intend on applying to the DPT program must meet with a physical therapy adviser as soon as possible to discuss programmatic differences that are required to meet the standards.

Students must be aware that several courses in the DPT curriculum are required to complete the EXPH major, resulting in a delay in matriculation. Students can participate in the May Commencement ceremonies following completion of the DPT4 year, however, diplomas will not be granted until December, after successful completion of the DPT5 Fall semester.

## Degree Requirements

A minimum of 128 credit hours are required for the degree including the following requirements:

| Area  | Credit Hours |
|---|--------------|
| UCCS Requirements   | 37           |
| Required Cognates   | 14           |
| Major (includes three credits of advanced EXPH electives) | 65           |
| Electives   | 15           |

## UCCS and Program Curriculum Requirements for EXPH

Refer to the University Core of Common Studies (UCCS) for courses that will meet requirements, if not specified below.

|   |   |
|---|---|
| UCCS Rhetoric (R)   | 6   |
| ENGL 1001   | Rhetoric and Composition 1                |
| ENGL 1002   | Rhetoric and Composition 2                |
| or COMM 1100  | Contemporary Presentation                 |
| UCCS Mathematics and Reasoning (MR) - One of the following: | 3   |
| MATH 1700   | Modern Elementary Statistics              |
| PSYC 2001   | Psychological Measurements and Statistics |
| SOCI 2060   | Social Statistics                         |
| UCCS Individual and Social Behavior (ISB)                   | 3   |
| PSYC 1001   | General Psychology                        |



|  |  |   |
|--|--|---|
| UCCS Diverse Cultures (DC)                     |  | 3 |
| Any approved UCCS DC course                    |  |   |
| UCCS Literature and Performing Arts (LPA)      |  | 3 |
| Any UCCS LPA approved course                   |  |   |
| UCCS Histories of Cultures and Societies (HCS) |  | 3 |
| Any UCCS HCS approved course                   |  |   |
| UCCS Science and Nature (SN)                   |  | 3 |
| BIOL 1001                                      | General Biology 1  |   |
| UCCS Human Nature and Ethics (HNE)             |  | 7 |
| PHIL 1001                                      | Philosophy of Human Nature   |   |
| PHIL 2310                                      | Theory of Ethics   |   |
| PHIL 4336                                      | Applied Ethics for the Health Sciences (or PHIL 4335 or THEO 4450, three credits each) |   |
| UCCS Theology (T)                              |  | 6 |
| THEO 1001                                      | Introduction to Theology   |   |
| One additional UCCS (T) approved class         |  |   |

## Required Cognate courses for EXPH

All students are required to complete:

|           |                     |   |
|-----------|---------------------|---|
| BIOL 1001 | General Biology 1   | 3 |
| BIOL 1002 | General Biology 2   | 3 |
| CHEM 1001 | General Chemistry 1 | 4 |
| CHEM 1002 | General Chemistry 2 | 4 |

## Exercise Physiology Major

The following major course requirements that must be completed with a C grade or better (see the Academic Performance section): BISC 1015 Principles of Human Anatomy and Physiology and all EXPH courses listed in the curriculum. In addition, students not entering the DPT program need to complete a minimum of 3 credits of advanced EXPH electives and students entering the DPT program need to complete a minimum of 2 credits of advanced EXPH electives.

Curricula have also been developed for those students interested in using Exercise Physiology as a pre-medical, pre-dental, pre-veterinary or pre-graduate school degree. Students are required to meet with an adviser to discuss programmatic differences based upon their unique circumstances.

## Typical Program for Exercise Physiology Major

| Freshman                                     |       |   |       |
|--|-------|---|-------|
| First Term                                   | Hours | Second Term                               | Hours |
| ENGL 1001 (R)                                | 3     | ENGL 1002 or COMM 1100 (R)                | 3     |
| CHEM 1001                                    | 4     | HEAL Cognate                              | 3     |
| EXPH 1010                                    | 2     | CHEM 1002                                 | 4     |
| EXPH 1001                                    | 2     | BISC 1015                                 | 5     |
| BIOL 1001                                    | 3     | EXPH 1050                                 | 1     |
| UCCS (HCS)                                   | 3     |   |       |
|  | 17    |   | 16    |
| Sophomore                                    |       |   |       |
| First Term                                   | Hours | Second Term                               | Hours |
| EXPH 2115                                    | 5     | PHIL 2310                                 | 3     |
| PSYC 1001 (ISB)                              | 3     | EXPH 2190                                 | 3     |
| PHIL 1001 (HNE)                              | 3     | EXPH 2110                                 | 4     |
| THEO 1001 (T)                                | 3     | Statistics (MR)                           | 3     |
| UCCS (LPA)                                   | 3     | BIOL 1002                                 | 3     |
|  | 17    |   | 16    |
| Junior                                       |       |   |       |
| First Term                                   | Hours | Second Term                               | Hours |
| EXPH 3100                                    | 3     | EXPH 3180                                 | 4     |
| EXPH 3986                                    | 2     | EXPH Elective*                            | 3     |
| EXPH 3189 Nutrition and Exercise Performance | 4     | EXPH 2106                                 | 3     |
| Electives                                    | 6     | UCCS (DC)                                 | 3     |
|  |       | UCCS (T)                                  | 3     |
|  | 15    |   | 16    |
| Senior                                       |       |   |       |
| First Term                                   | Hours | Second Term                               | Hours |
| EXPH 3170                                    | 3     | EXPH 4986 Exercise Physiology Practicum 2 | 16    |
| EXPH 4187                                    | 3     |   |       |
| EXPH 4192                                    | 4     |   |       |

|                         |    |  |    |
|-------------------------|----|--|----|
| PHIL 4336               | 1  |  |    |
| Electives               | 4  |  |    |
|                         | 15 |  | 16 |
| Total credit hours: 128 |    |  |    |

\* Minimum of 3 credits of advanced exercise physiology electives required.

**Note:** Major courses ( BISC 1015 Principles of Human Anatomy and Physiology and all EXPH courses listed in the curriculum) completed with a CD or less must be repeated prior to advancing in the course sequence for the sophomore and junior years.

## Typical Program for Exercise Physiology Major - Direct Admit DPT

This curriculum has been developed to accommodate the prerequisites for entrance into the DPT while meeting the required course work for the exercise physiology major. Students that are either direct admit DPT students or intend on applying to the DPT program must meet with an adviser as soon as possible to discuss programmatic differences that are required to meet entrance standards.

| Freshman        |       |                            |       |  |
|-----------------|-------|----------------------------|-------|--|
| First Term      | Hours | Second Term                | Hours |  |
| ENGL 1001 (R)   | 3     | ENGL 1002 or COMM 1100 (R) | 3     |  |
| CHEM 1001       | 4     | HEAL Cognate               | 3     |  |
| EXPH 1001       | 2     | CHEM 1002                  | 4     |  |
| EXPH 1010       | 2     | BISC 1015                  | 5     |  |
| BIOL 1001 (SN)  | 3     | PHTH 1001                  | 1     |  |
|                 |       | EXPH 1050                  | 1     |  |
|                 | 14    |                            | 17    |  |
| Sophomore       |       |                            |       |  |
| First Term      | Hours | Second Term                | Hours |  |
| EXPH 2115       | 5     | PHIL 2310 (HNE)            | 3     |  |
| PSYC 1001 (ISB) | 3     | EXPH 2190                  | 3     |  |
| PHIL 1001 (HNE) | 3     | EXPH 2110                  | 4     |  |
| THEO 1001 (T)   | 3     | Statistics (MR)            | 3     |  |
| UCCS (HCS)      | 3     | BIOL 1002                  | 3     |  |
|                 | 17    |                            | 16    |  |

| Junior                                       |       |                           |       |                           |       |
|--|-------|---------------------------|-------|---------------------------|-------|
| First Term                                   | Hours | Second Term               | Hours |                           |       |
| EXPH 3100                                    | 3     | EXPH 3180                 | 4     |                           |       |
| EXPH 3986                                    | 2     | EXPH elective**           | 2     |                           |       |
| UCCS (LPA)                                   | 3     | EXPH 2106                 | 3     |                           |       |
| PHYS 1001                                    | 4     | PHYS 1002                 | 4     |                           |       |
| PHIL 4336                                    | 1     | UCCS (T)                  | 3     |                           |       |
| EXPH 3189 Nutrition and Exercise Performance | 3     |                           |       |                           |       |
|  | 16    |                           | 16    |                           |       |
| Senior                                       |       |                           |       |                           |       |
| First Term                                   | Hours | Second Term               | Hours | Summer Term               | Hours |
| PHTH 7513 (for EXPH 3170)                    | 3     | BISC 4120                 | 3     | PHTH 7504 (for EXPH 4986) | 2     |
| BISC 4130                                    | 5     | BISC 3150                 | 3     | DPT Curriuculm            |       |
| BIOL 3701                                    | 4     | PHTH 7515 (for EXPH 3187) | 4     |                           |       |
| PHTH 7503                                    | 3     | PHTH 7528                 | 2     |                           |       |
| PHTH 7512 (DC)                               | 3     | PHTH 7525                 | 3     |                           |       |
|  |       | PHTH 7530                 | 2     |                           |       |
|  | 18    |                           | 17    |                           | 2     |
| DPT 5  |       |                           |       |                           |       |
| First Term                                   | Hours |                           |       |                           |       |
| PHTH 7518 (for EXPH 4192)                    | 3     |                           |       |                           |       |
| PHTH 4986 (for EXPH 4986)                    | 4     |                           |       |                           |       |
| DPT Curriculum                               |       |                           |       |                           |       |
|  | 7     |                           |       |                           |       |
| Total credit hours: 140                      |       |                           |       |                           |       |

\* Or BISC 4145 Human Physiology (offered Spring term only)

\*\* Minimum of 2 credits of advanced exercise physiology electives required.

\*\*\* Students enrolled in the Doctor of Physical Therapy program will follow the curricula as established by the Physical Therapy Department. The curriculum includes courses in the fourth and fifth year of the DPT program that will substitute for required EXPH major courses (listed in parenthesis). Students can participate in the May Commencement ceremony with their class, however, diplomas and official transcripts will not be granted until satisfactory completion of the fall semester in the DPT5 year.

## Typical Program for Exercise Physiology Majors - Accelerated Degree Program/M.S. Non-thesis

| Freshman                                     |       |                        |       |
|--|-------|------------------------|-------|
| First Term                                   | Hours | Second Term            | Hours |
| BIOL 1001                                    | 3     | BISC 1015              | 5     |
| CHEM 1001                                    | 4     | CHEM 1002              | 4     |
| ENGL 1001                                    | 3     | ENGL 1002 or COMM 1100 | 3     |
| EXPH 1001                                    | 2     | EXPH 1050              | 1     |
| EXPH 1010                                    | 2     | UCCS (DC)              | 3     |
| UCCS (HCS)                                   | 3     |                        |       |
|  | 17    |                        | 16    |
| Sophomore                                    |       |                        |       |
| First Term                                   | Hours | Second Term            | Hours |
| EXPH 2115                                    | 5     | BIOL 1002              | 3     |
| PHIL 1001                                    | 3     | EXPH 2110              | 4     |
| PSYC 1001                                    | 3     | EXPH 2190              | 3     |
| UCCS LPA                                     | 3     | PHIL 2310              | 3     |
| THEO 1001                                    | 3     | Statistics (MR)        | 3     |
|  | 17    |                        | 16    |
| Junior                                       |       |                        |       |
| First Term                                   | Hours | Second Term            | Hours |
| EXPH 3100                                    | 3     | EXPH 2106              | 3     |
| EXPH 3189 Nutrition and Exercise Performance | 4     | EXPH 3180              | 4     |

|                         |              |   |              |
|-------------------------|--------------|---|--------------|
| EXPH 3986               | 2            | EXPH 2931 Topics in Exercise Physiology | 3            |
| PHYS 1001               | 4            | UCCS (T)                                | 3            |
| Elective                | 3            | Elective                                | 3            |
|                         | 16           |   | 16           |
| <b>Senior</b>           |              |   |              |
| <b>First Term</b>       | <b>Hours</b> | <b>Second Term</b>                      | <b>Hours</b> |
| EXPH 3170               | 3            | BISC 5145**                             | 4            |
| EXPH 4187               | 3            | CTRH 6960 Seminar in CTRH**             | 0            |
| EXPH 4192               | 4            | CTRH TBD (RCR)**                        | 0            |
| CTRH 6020**             | 2            | PHIL 4336                               | 1            |
| CTRH 6958**             | 1            | EXSC 4986 EXPH Practicum 2              | 8            |
| CTRH 6135**             | 4            |   |              |
|                         | 17           |   | 13           |
| Total credit hours: 128 |              |   |              |

\* Minimum 3 credits of Advanced EXPH electives are required. Additional EXPH electives are strongly recommended.

\*\* Courses (11 credits) taken in senior year that apply toward the CTRH graduate program.

### Typical Program for Exercise Physiology Majors - Accelerated Degree Program/M.S. Thesis

|                   |              |                        |              |
|-------------------|--------------|------------------------|--------------|
| <b>Freshman</b>   |              |                        |              |
| <b>First Term</b> | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |
| BIOL 1001         | 3            | BISC 1015              | 5            |
| CHEM 1001         | 4            | CHEM 1002              | 4            |
| ENGL 1001         | 3            | ENGL 1002 or COMM 1100 | 3            |
| EXPH 1001         | 2            | EXPH 1050              | 1            |
| EXPH 1010         | 2            | UCCS (DC)              | 3            |
| UCCS (HCS)        | 3            |                        |              |
|                   | 17           |                        | 16           |

| <b>Sophomore</b>                             |              |  |              |
|--|--------------|--|--------------|
| <b>First Term</b>                            | <b>Hours</b> | <b>Second Term</b>                       | <b>Hours</b> |
| EXPH 2115                                    | 5            | BIOL 1002                                | 3            |
| PHIL 1001                                    | 3            | EXPH 2110                                | 4            |
| PSYC 1001                                    | 3            | EXPH 2190                                | 3            |
| UCCS (LPA)                                   | 3            | PHIL 2310                                | 3            |
| Elective                                     | 3            | Statistics (MR)                          | 3            |
|  | 17           |  | 16           |
| <b>Junior</b>                                |              |  |              |
| <b>First Term</b>                            | <b>Hours</b> | <b>Second Term</b>                       | <b>Hours</b> |
| EXPH 3100                                    | 3            | EXPH 3180                                | 4            |
| EXPH 3986                                    | 2            | EXPH 2106                                | 3            |
| PHYS 1001                                    | 4            | EXPH 2931 Topics in Exercise Physiology* | 2            |
| Elective                                     | 3            | UCCS (T)                                 | 3            |
| EXSC 3189 Nutrition and Exercise Performance | 4            | Electives                                | 4            |
|  | 16           |  | 16           |
| <b>Senior</b>                                |              |  |              |
| <b>First Term</b>                            | <b>Hours</b> | <b>Second Term</b>                       | <b>Hours</b> |
| EXPH 3170                                    | 3            | PHIL 4336                                | 1            |
| EXPH 4187                                    | 3            | EXPH 4986 EXPH Practicum 2               | 8            |
| EXPH 4192                                    | 4            | BISC 5145**                              | 4            |
| CTRH 6020**                                  | 2            | CTRH TBD (RCR)**                         | 0            |
| CTRH 6958**                                  | 1            | CTRH 6960 Seminar in CTRH**              | 0            |
| CTRH 6135**                                  | 4            | CTRH 6958**                              | 1            |
|  | 17           |  | 14           |
| Total credit hours: 129                      |              |  |              |

\* Minimum 3 credits of Advanced EXPH electives are required. Additional EXPH electives are strongly recommended.

\*\* Courses (12 credits) taken in senior year that apply toward the CTRH graduate program.

# Speech Pathology and Audiology

**Chairperson:** *Edward W. Korabic, Ph.D., CCC-A, FAAA*

Department of Speech Pathology and Audiology website (<http://www.marquette.edu/chs/speech/>)

The Department of Speech Pathology and Audiology at Marquette University offers a bachelor of science degree in speech pathology and audiology and a master of science degree in speech-language pathology. The undergraduate program is considered pre-professional, meaning that a graduate degree is necessary before a person is qualified for professional employment.

The primary purpose of the undergraduate program is to provide introductory level knowledge in the field of Speech Pathology and Audiology, within the context of a traditional liberal Arts and Sciences education, which prepares an individual for study in a professional graduate degree program. This liberal education is based on the philosophy that the individual with an educational foundation in the Arts and Sciences will have a broad appreciation for society and its values. Such a traditional undergraduate emphasis provides the needed foundation for the more narrowly focused professional education at the graduate level and is suitable for careers in other communication, education and health-related professions besides speech-language pathology and audiology.

The undergraduate major in speech pathology and audiology includes courses in the areas of normal speech production and development, disorders of speech, language and hearing and methods of evaluation and therapy. Clinical practicum involves actual work with children and adults having speech/language/hearing problems under the direct supervision of certified speech-language pathologists and audiologists. This work is accomplished at the Marquette University Speech and Hearing Clinic.

Professional preparation occurs at the graduate level and is a prerequisite for certification/ licensure as a professional speech-language pathologist or audiologist. Marquette University's M.S. Program in Speech-Language Pathology is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (CAA-ASHA) and is directed toward preparing students for the Certificate of Clinical Competence in Speech-Language Pathology (CCC-SLP). The graduate curriculum offers advanced course work and clinical practicum experiences in the nature, prevention, identification, evaluation and treatment of speech, language, hearing and related disorders in both children and adults. For students interested in licensure as a public school speech-language clinician, the curriculum meets the requirements of the Department of Public Instruction of the state of Wisconsin (WI-DPI) for licensure as a speech-language clinician.

## Information Regarding Professional Certification and Licensure

Students completing professional training in Speech-Language Pathology or Audiology become eligible for certification by the American Speech-Language-Hearing Association (ASHA). This Association awards the Certificate of Clinical Competence to educationally and professionally qualified applicants. The minimum academic requirement for this certification is completion of a graduate program accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (CAA-ASHA). Most employers of speech-language pathologists and audiologists require this certification.

Students wishing to work as a speech-language pathologist or audiologist in the public schools must qualify for licensure from the Department of Public Instruction in the state of Wisconsin (DPI-WI), as well as meet the additional requirements of any other state in which they wish to practice. In most states, the master's degree is the minimum requirement for licensure as a speech-language pathology or audiology clinician.

Finally, most states require speech-language pathologists and audiologists to hold a license from the state's department of regulation and licensing. Typically, individuals having met the certification requirements for ASHA will be eligible for state licensing.



The Speech Pathology and Audiology curriculum is specifically structured to facilitate eventual fulfillment of both ASHA certification and state of Wisconsin licensure requirements. In anticipation of meeting these requirements, specific course work in speech-language pathology and audiology as well as course work in related areas such as psychology, education, social science, natural science and math are included in the Speech Pathology and Audiology curriculum.

## **Degree Offered**

The undergraduate curriculum in Speech Pathology and Audiology is a four-year program leading to a bachelor of science degree. This program entails eight semesters of course work, and may include up to 50 clock hours of clinical practicum associated with various professional courses. Marquette University requires 128 semester credits of course work for the bachelor's degree, and a student generally carries between 15 and 18 credits per semester. Since a B average or better is required to be considered for admission into most graduate programs, it is important that students majoring in Speech Pathology and Audiology work toward maintaining high academic achievement throughout their undergraduate program.

## **Accelerated Degree Program (ADP)**

The Department of Speech Pathology and Audiology offers early admission into its M.S. Program in Speech-Language Pathology. Marquette undergraduate students majoring in speech pathology and audiology can apply for this program in the second semester of their junior year. Students accepted into this program are eligible to enroll in up to 12 credits of Speech Pathology and Audiology (SPPA) course work that carry graduate credit during their senior year. Credits obtained for these courses can be used to fulfill both undergraduate and graduate degree requirements. Once students inform the Graduate School of their completion of undergraduate degree requirements, their admission as a regular degree status (RDS) student in the graduate program is activated.

## **Bilingual English-Spanish Certificate (BIES)**

The Department of Speech Pathology and Audiology offers a Bilingual English-Spanish Certificate (BIES) as part of its Master's Degree program in Speech-Language Pathology. The BIES program prepares speech-language pathology students who are proficient in Spanish to evaluate and treat speech, language and hearing problems in individuals who speak Spanish or are bilingual (Spanish-English) in educational or medical settings. This certificate program consists of four courses as well as clinical work specifically designed to meet guidelines suggested by the American Speech-Language-Hearing Association (ASHA) for bilingual speech-language pathologists. Two of these courses (SPAN 4120 – Phonetics and SPPA 4610 – Multicultural Issues for Speech-Language Pathologists) may be taken at the undergraduate level. Students who are Spanish-English bilingual and/or those who are considering a major or minor in Spanish are encouraged to meet with the Director of Graduate Studies in the Department of Speech Pathology and Audiology and an academic adviser in the Department of Foreign Languages and Literature for advising regarding potential admission to the BIES program at the graduate level.

## **Students with Communicative Disorders**

The Department of Speech Pathology and Audiology at Marquette University is dedicated to graduating students with optimum preparation for successful careers in the profession of communication disorders. Since voice, fluency, articulation, language or hearing impairments may interfere with a clinician's ability to effectively treat persons with communication impairments, we encourage students in our program with such impairments to seek treatment.

## English Proficiency

Our department supports the position of the American Speech-Language-Hearing Association in encouraging persons of diverse backgrounds to enter the field of communication disorders. All students in the Department of Speech Pathology and Audiology must provide evidence of adequate written and verbal communication skills in Standard American English necessary to meet academic and clinical requirements. Non-native speakers of English will work closely with their advisers throughout the course of their study toward establishing this proficiency prior to enrollment in clinical practicums. Students who speak with accents and/or dialects may seek assistance in improving these skills at the recommendation of department instructional staff.

## Admission Requirements

Applicants to the Department of Speech Pathology and Audiology are expected to fulfill the admission requirements listed in the University section of this bulletin. Entering freshmen are accepted for the fall term.

Admission into the undergraduate major in speech pathology and audiology qualifies a student for the bachelor of science program; it does not extend to the graduate (master's degree) level. Separate application to the graduate school must be made, usually during a student's senior year.

Students may enter the Department of Speech Pathology and Audiology as a freshman, or may transfer into the program from another university division or another institution later in their academic program. Applicants for advanced standing admission into the Speech Pathology and Audiology program should understand that a grade point average of 3.000 or better is required to be considered for admission into most graduate programs.

Since admission requirements for master's degree programs may vary from one university to another, the applicant is responsible for meeting those requirements of the institution he or she desires to enter.

## Professional Standards

All papers produced by students in all classes under department jurisdiction are expected to conform to professional standards of lucidity, coherence, grammar, spelling, and punctuation. All oral presentations produced by students in all classes under department jurisdiction are expected to conform to professional standards of lucidity, coherence, and grammar. All instructors in all classes under department jurisdiction consider the factors listed above, as well as substance, in grading written and oral presentations.

## CD and D Grades

Courses completed with a grade of CD or D do not count toward the total hour requirement for a major or minor but do fulfill the subject matter requirement and do count toward the total number of credit hours for graduation.

## Degree Requirements

Candidates for a Bachelor of Science degree must earn a minimum of 128 semester hours of credit. Students are required to have a GPA of at least 2.800 at the conclusion of their sophomore year to continue the program. Credits include the following requirements:

## UCCS and Department Curriculum Requirements

Students majoring in Speech Pathology and Audiology must complete a minimum of 52 semester hours of core curriculum requirements. The University Core of Common Studies (UCCS) (<http://mu.edu/programs/core/list.shtml>) curriculum is included in the Speech Pathology and Audiology (SPPA) Core Curriculum requirements.

### Rhetoric (R) 6 credits

All students must complete:

|                    |                            |   |
|--------------------|----------------------------|---|
| ENGL 1001          | Rhetoric and Composition 1 | 3 |
| ENGL 1002          | Rhetoric and Composition 2 | 3 |
| Total Credit Hours |                            | 6 |

Non-native speakers of English should consult the director of the English as a Second Language Program concerning concurrent registration in the appropriate ESLP course and the section of ENGL 1001 Rhetoric and Composition 1 designated for non-native speakers.

### Mathematical Reasoning (MR) 3-4 credits

All students must complete one of the following UCCS MR statistics classes:

|                                |   |     |
|--------------------------------|---|-----|
| Complete one of the following: |   | 3-4 |
| MATH 1700                      | Modern Elementary Statistics              |     |
| PSYC 2001                      | Psychological Measurements and Statistics |     |
| Total Credit Hours             |   | 3-4 |

### Diverse Cultures (DC) 3 credits

All student must complete a course approved for inclusion in the UCCS curriculum. See UCCS website (<http://mu.edu/programs/core/list.shtml>).

### Histories of Cultures and Societies (HCS) 6 credits

All students must complete:

|                    |   |   |
|--------------------|---|---|
| HIST 1001          | Growth of Western Civilization to 1715    | 3 |
| HIST 1002          | Growth of Western Civilization since 1715 | 3 |
| Total Credit Hours |   | 6 |

### Individual and Social Behavior (ISB) 6 credits

All students must complete:

|                    |  |   |
|--------------------|--|---|
| PSYC 1001          | General Psychology                                       | 3 |
| PSYC 3101          | Developmental Psychology: Conception Through Adolescence | 3 |
| Total Credit Hours |  | 6 |

### Literature and Performing Arts (LPA) 5-6 credits

All students must complete:

- three credits in either English literature or foreign language literature (original or translation)
- two to three credits in performing arts
- Three of the 5-6 credits must be in a course approved for inclusion in the UCCS curriculum. See UCCS website (<http://mu.edu/programs/core/list.shtml>).

### Science and Nature (SN) 7-9 credits

All students must complete:

|                                 |  |     |
|---------------------------------|--|-----|
| PHYS 1001                       | General Physics 1                          | 4   |
| And choose one of the following |  | 3-5 |
| BISC 1015                       | Principles of Human Anatomy and Physiology |     |
| BIOL 1001                       | General Biology 1                          |     |
| Total Credit Hours              |  | 7-9 |

### Human Nature and Ethics (HNE) 7-9 credits

All students must complete:

|                    |   |   |
|--------------------|---|---|
| PHIL 1001          | Philosophy of Human Nature  | 3 |
| PHIL 2310          | Theory of Ethics  | 3 |
| PHIL 4336          | Applied Ethics for the Health Sciences (or other medical ethics course) | 1 |
| Total Credit Hours |   | 7 |

### Theology (T) 6 credits

All students must complete:

|  |                          |   |
|--|--------------------------|---|
| THEO 1001  | Introduction to Theology | 3 |
| An additional UCCS approved second-level THEO course |                          | 3 |
| Total Credit Hours                                   |                          | 6 |

See UCCS website (<http://mu.edu/programs/core/list.shtml>).

### Foreign Language 0-8 credits

All students must demonstrate one-year college competency in a foreign language — foreign language 1-2. This may be accomplished by placement or course. Students who have never studied a foreign language or wish to pursue a new language must take levels 1 and 2 to complete the requirement. Students who have earned high school credit in French, German or Spanish, and who plan to continue with the study of that language must take the WebCAPE Placement Examination to determine placement in the appropriate course. On the basis of the achieved score, students will be placed in the appropriate language course. Students who are placed in 3 or higher are exempt from the foreign language requirement. For further details, see the University section on Placement Credit in Foreign Languages.

### Undergraduate Practicum in Speech Pathology and Audiology

The student majoring in Speech Pathology and Audiology may complete up to 50 clock hours of direct work with individuals with speech/language/hearing problems. This practicum experience is closely supervised by university personnel who hold the Certificate of Clinical Competence in Speech-Language Pathology or Audiology awarded by the American Speech-Language-Hearing Association. This practicum begins second semester of the junior year and is generally completed in two semesters.

### Supplemental Course work

The selection of elective courses will be determined by the professional goals of the student. An academic adviser should be consulted for recommendations concerning the appropriate program to follow.

The student planning to continue graduate work in Speech-Language Pathology is advised to prepare for meeting requirements for licensure as a public school speech and language pathologist. This significantly broadens the scope of professional employment opportunities upon completion of training. Undergraduate courses recommended are:

- PSYC 3130 The Psychology of the Exceptional Child
- SPPA 4610 Multicultural Issues for Speech-Language Pathologists

### Related Fields

Students wishing to pursue graduate studies in Deaf Education, Learning Disabilities, Special Education, and other related areas may need to supplement their program of studies with additional course work. Students interested in these areas should consult institutions conferring such degrees for prerequisites and requirements.

## Laboratories

The Marquette University Speech and Hearing Clinic serves as a working laboratory for students in the speech pathology and audiology program. The clinic has individual therapy rooms for adults and children, three diagnostic suites, a hearing testing suite and rooms designed for specialized speech/language therapy: child language room, adult language room, augmentative/ alternate communication room and sensory integration room. Other speech pathology and audiology laboratories include child language, phonology and language analysis, bilingual language and literacy, speech and swallowing, neurolinguistics, dysphagia and student computer room.

## Curricula Information

### Typical Program for Speech Pathology and Audiology Majors

| Freshman                     |       |                  |       |
|------------------------------|-------|------------------|-------|
| First Term                   | Hours | Second Term      | Hours |
| SPPA 1001                    | 3     | SPPA 1100        | 3     |
| ENGL 1001 (R)                | 3     | ENGL 1002 (R)    | 3     |
| HIST 1001 (HCS)              | 3     | UCCS (SN)        | 3-5   |
| MATH 1700 or PSYC 2001 (MR)* | 3-4   | Foreign Language | 3-4   |
| Foreign Language             | 3-4   | Elective         | 3     |
|                              | 15-17 |                  | 15-18 |
| Sophomore                    |       |                  |       |
| First Term                   | Hours | Second Term      | Hours |
| SPPA 2120                    | 3     | SPPA 2210        | 3     |
| SPPA 2130                    | 3     | SPPA 2220        | 3     |
| PHIL 1001 (HNE)              | 3     | THEO 1001        | 3     |
| PSYC 1001 (ISB)              | 3     | UCCS (LPA)**     | 2-3   |
| PHYS 1001                    | 4     | HIST 1002        | 3     |
|                              |       | Elective         | 3     |
|                              | 16    |                  | 17-18 |
| Junior                       |       |                  |       |
| First Term                   | Hours | Second Term      | Hours |
| SPPA 3140                    | 3     | SPPA 4230        | 3     |
| PSYC 3101                    | 3     | SPPA 3710        | 3     |
| PHIL 2310 (HNE)              | 3     | SPPA 3964        | 1     |
| UCCS (T)                     | 3     | SPPA 3510        | 3     |

|                             |              |                         |              |
|-----------------------------|--------------|-------------------------|--------------|
| Fine Arts/Lit**             | 2-3          | PSYC 3130 (recommended) | 3            |
| Elective                    | 3            | PHIL 4336               | 1            |
|                             |              | Elective                | 3            |
|                             | 17-18        |                         | 17           |
| <b>Senior</b>               |              |                         |              |
| <b>First Term</b>           | <b>Hours</b> | <b>Second Term</b>      | <b>Hours</b> |
| SPPA Elective               | 1            | SPPA Elective           | 3            |
| SPPA Elective               | 3            | UCCS (DC)               | 3            |
| Electives                   | 12           | Electives               | 9            |
|                             | 16           |                         | 15           |
| Total credit hours: 128-135 |              |                         |              |

\* If taking PSYC 2001 Psychological Measurements and Statistics to fulfill UCCS MR statistics requirement and have not completed the prerequisite of PSYC 1001 General Psychology, recommend taking either THEO 1001 Introduction to Theology or PSYC 1001 General Psychology in place of the UCCS MR statistics requirement first semester.

\*\* Students must complete both a literature course and a fine arts/performing arts course. At least one of these two courses must fulfill the UCCS LPA requirement.

## Speech Pathology and Audiology Major

The Speech Pathology and Audiology major consists of a minimum of 38 semester credits. The following courses constitute the Speech Pathology and Audiology major:

|           |   |   |
|-----------|---|---|
| SPPA 1001 | Introduction to Speech-Language Pathology and Audiology | 3 |
| SPPA 1100 | Anatomy and Physiology of the Speech Mechanism          | 3 |
| SPPA 2120 | Phonetics and Phonology                                 | 3 |
| SPPA 2130 | Child Language Development                              | 3 |
| SPPA 2210 | Child Language Disorders                                | 3 |
| SPPA 2220 | Child Speech and Sound Disorders                        | 3 |
| SPPA 3140 | Speech Science  | 3 |
| SPPA 3510 | Introduction to Audiology                               | 3 |
| SPPA 3710 | Intervention Methods in Speech-Language Pathology       | 3 |
| SPPA 3964 | Practicum in Speech-Language Pathology 1: Campus Clinic | 1 |

|   |   |    |
|---|---|----|
| SPPA 4230   | Stuttering and Other Fluency Disorders                  | 3  |
| And an additional 7 hours, chosen from the following: |   | 7  |
| SPPA 4310   | Introduction to Neurological Disorders                  |    |
| SPPA 4520   | Hearing Disorders                                       |    |
| SPPA 4530   | Audiological Rehabilitation                             |    |
| SPPA 4610   | Multicultural Issues for Speech-Language Pathologists   |    |
| SPPA 4720   | Diagnostic Methods in Speech-Language Pathology         |    |
| SPPA 4964   | Practicum in Speech-Language Pathology 2: Campus Clinic |    |
| SPPA 4965   | Practicum in Audiology: Campus Clinic                   |    |
| Total Credit Hours                                    |   | 38 |

## Speech Pathology and Audiology Minor

A minor is not required of students majoring in speech pathology and audiology. If the student chooses to select a minor, an interdisciplinary minor of his or her choice may be formulated, or a minor may be selected in any department of the university. In the latter instance, the minor requirements are subject to the regulations of the department involved. Minors in psychology, foreign language (particularly Spanish) or family studies have been found to be particularly useful to students seeking a career in speech-language pathology or audiology. Students should consult with their academic adviser about pursuing a minor.



## Student Organizations

### **American Medical Student Association (AMSA)**

This student organization is for students interested in medical school. The organization provides opportunities for students to interact with fellow students and professionals in the medical field. All students in the university interested in applying to medical school are eligible to join.

### **Biomedical Sciences Student Association (BMSA)**

All Biomedical Sciences students are eligible for membership in the Biomedical Sciences Association. The purpose of the organization is to provide students with opportunities to learn more about career opportunities; interact with alumni; develop service opportunities; participate in fund-raising activities; and interact with other students and faculty in a more informal setting.

### **College of Health Sciences Student Council**

All health sciences students are eligible for membership in the College of Health Sciences Student Council. The council functions as a liaison between the college and the Marquette University Student Government. The council serves as a coordinating instrument of professional and social activities for all students in the College of Health Sciences. Its purpose is to stimulate a professional attitude among health sciences students; to promote cooperation and understanding among health sciences students as well as with the faculty and administration; and an awareness and promotion of health education in the community.

### **Clinical Laboratory Science**

In addition to the university student organizations, clinical laboratory science students are eligible for membership in the Clinical Laboratory Science Student Council, the American Society for Clinical Laboratory Science (ASCLS) and the American Society for Clinical Pathology (ASCP).

### **Physical Therapy**

Students enrolled in the Department of Physical Therapy are eligible for membership in the Physical Therapy Student Council and are required to become student members in the American Physical Therapy Association during the professional phase of the program.

### **Physician Assistant Studies**

The Student Association of the American Academy of Physician Assistants has awarded a charter membership to the Department of Physician Assistant Studies at Marquette University. All students in the program participate. The organization coordinates fundraising activities, hosts guest lecturers and interacts with other student groups as well as the Wisconsin Academy of Physician Assistants. A major goal of the group is to facilitate student involvement in the political process of their national organization.

## **Pre-dental Student Organization of Marquette University**

This student organization is for students interested in the field of dentistry. The organization provides an opportunities for students to interact with fellow students and professionals in the field of dentistry. All students in the university interested in the field of dentistry are eligible to join.

## **Speech Pathology and Audiology**

The Marquette University Chapter of the National Student Speech-Language-Hearing Association (MU-NSSLHA) is comprised of undergraduate and graduate students interested in the professions of Speech-Language Pathology and Audiology. The organization hosts guest speakers from the professional community, interacts with other student groups and is active in community and charitable organizations.

## Course Descriptions

### Athletic Training

#### **ATTR 1020. Prevention and Care of Athletic Injuries. 2 cr. hrs.**

Lecture/lab. Common athletic injuries and illnesses will be presented with emphasis on prevention and care. Principles and techniques of athletic taping and bracing as well as equipment fitting, blister and wound care will be discussed. Prereq: ATTR major; or EXSC major; or cons. of instr.

#### **ATTR 2130. Athletic Training Evaluation 1. 3 cr. hrs.**

Lecture/lab. Pre-season screening and evaluation procedures will be discussed. Concepts of evaluation will be emphasized. Common medical diagnostic procedures will be reviewed and evaluation of the lower extremity will be introduced. Includes screening of internal injuries in athletic participation. Anatomy and physiology. Prereq: EXSC 2115, which may be taken concurrently, and cons. of instr.

#### **ATTR 2131. Athletic Training Evaluation 2. 3 cr. hrs.**

Lecture/lab. This course is a continuation of Evaluation I and includes assessment of the trunk, back, neck, head and upper extremity. Prereq: ATTR 2130 and cons. of instr.

#### **ATTR 2150. Therapeutic Modalities. 2 cr. hrs.**

Lecture/lab. This course will present current concepts in the use of modalities in the treatment of athletic injuries and the pathophysiology of tissue injury and healing. Prereq: ATTR 2131 and cons. of instr.

#### **ATTR 2201. Athletic Training Seminar 1. 0 cr. hrs.**

Selected topics pertinent to the field of athletic training and applicable to all levels of the athletic training major are presented. Course includes student presentations, case presentations, guest speakers, faculty speakers and topics that are not covered in other courses in the curriculum. Prereq: Athletic Training Major or cons. of instr.

#### **ATTR 2202. Athletic Training Seminar 2. 0 cr. hrs.**

Selected topics pertinent to the field of athletic training and applicable to all levels of the athletic training major are presented. Course includes student presentations, case presentations, guest speakers, faculty speakers and topics that are not covered in other courses in the curriculum. Prereq: Athletic Training Major or cons. of instr.

#### **ATTR 2931. Topics in Athletic Training. 1-4 cr. hr.**

Selected topics, not a part of the regular course work taught because of a special need, interest or opportunity. Prereq: Jr. stdng. and EXSC major; or Sr. stdng. and EXSC major; or Jr. stdng. and ATTR major; or Sr. stdng. and ATTR major; or cons. of instr.

#### **ATTR 2981. Clinical Proficiencies in Athletic Training 1. 1 cr. hr.**

Clinical psychomotor skills related to emergency care, taping, equipment fitting and prevention of injury will be assessed in the clinical environment. S/U grade assessment. Prereq: ATTR 1020.

#### **ATTR 2982. Clinical Proficiencies in Athletic Training 2. 1 cr. hr.**

Clinical psychomotor skills related to evaluation of the lower extremity will be assessed in the clinical environment. S/U grade assessment. Prereq: ATTR 2981 and ATTR 2130.

#### **ATTR 3160. Rehabilitative/Therapeutic Exercise in Athletic Training. 2 cr. hrs.**

Lecture/lab. This course will present current concepts in the design and administration of rehabilitative/therapeutic exercise in the treatment of athletic injuries. Prereq: ATTR 2131.

**ATTR 3170. General Medicine in Athletic Training. 3 cr. hrs.**

Lecture/lab. This course is designed to describe and assess common general medical conditions seen in athletics and includes: common ear and mouth pathologies, description of and assessment of respiratory conditions, common conditions such as diabetes mellitus, urinary tract infections, reproductive abnormalities and viral/infective disorders will be discussed. Common clinical skills (auscultation, vital signs, otoscope, chemstrips, ocular motor function spirometry) will be demonstrated and mastered. Prereq: ATTR 2131; or ATTR 2150; or cons. of instr.

**ATTR 3203. Athletic Training Seminar 3. 0 cr. hrs.**

Selected topics pertinent to the field of athletic training and applicable to all levels of the athletic training major are presented. Course includes student presentations, case presentations, guest speakers, faculty speakers and topics that are not covered in other courses in the curriculum. Prereq: Athletic Training Major or cons. of instr.

**ATTR 3204. Athletic Training Seminar 4. 0 cr. hrs.**

Selected topics pertinent to the field of athletic training and applicable to all levels of the athletic training major are presented. Course includes student presentations, case presentations, guest speakers, faculty speakers and topics that are not covered in other courses in the curriculum. Prereq: Athletic Training Major or cons. of instr.

**ATTR 3983. Clinical Proficiencies in Athletic Training 3. 1 cr. hr.**

Clinical psychomotor skills related to evaluation of the upper extremity, spine, and those relating to the application of the therapeutic modalities will be assessed in the clinical environment. S/U grade assessment. Prereq: ATTR 2982 and ATTR 2131 and ATTR 2150.

**ATTR 3984. Clinical Proficiencies in Athletic Training 4. 1 cr. hr.**

Clinical psychomotor skills related to therapeutic exercise will be assessed in the clinical environment. S/U grade assessment. Prereq: ATTR 3983 and ATTR 3160.

**ATTR 3985. Clinical Proficiencies in Athletic Training 5. 1 cr. hr.**

Clinical psychomotor skills related to general medical principles, psychosocial intervention, health care administration, exercise program management, and selected special topics will be assessed in the clinical environment. S/U grade assessment. Prereq: ATTR 3170 and ATTR 3984.

**ATTR 4120. Pharmacology in Athletic Training. 3 cr. hrs.**

Course includes the concepts and content related to pharmacology from the athletic training educational competencies. Topics include: pharmacodynamics, pharmacokinetics, terminology related to pharmacology, legal aspects of medication management, as well as, absorption, distribution, metabolism and elimination of common medications and other drugs as it relates to athletes and the athletic population. Prereq: EXSC 2115; Athletic Training Major or cons. of instr.

**ATTR 4205. Athletic Training Seminar 5. 0 cr. hrs.**

Selected topics pertinent to the field of athletic training and applicable to all levels of the athletic training major are presented. Course includes student presentations, case presentations, guest speakers, faculty speakers and topics that are not covered in other courses in the curriculum. Prereq: Athletic Training Major or cons. of instr.

**ATTR 4986. Practicum in Athletic Training. 7-16 cr. hrs.**

Students will experience field work, hands on clinical experience, event coverage and preparation over an entire semester. Injury assessment, use of modalities, evaluation and rehabilitation skills will be strengthened. Practicum will be under the direct supervision of a certified athletic trainer. Current CPR and First Aid certifications. S/U grade assessment. Prereq: Sr. stndg., ATTR major, cons. of dept. ch., and cons. of program director.

**ATTR 4995. Independent Study in Athletic Training. 1-4 cr. hr.**

Independent Study. Prereq: Cons. of instr.

## Biomedical Sciences

### **BISC 1001. Contemporary Issues in Biomedical Sciences. 1 cr. hr.**

Introduction to the field of biomedical sciences with a special emphasis on current topics in health and medicine, development of critical thinking skills, and professional development. S/U grading basis. Prereq: BISC major with Freshman stdng.

### **BISC 1010. Contemporary Issues in Nutrition. 3 cr. hrs.**

Personalized nutrition applications for health promotion designed for non-science majors. Topics include scientific methods, nutrients, life cycle nutrition, weight management, disordered eating, dietary supplements (including botanicals) and nutrition and fitness. Not to be taken for credit by students who have had HEAL 2045 or BISC 3110.

### **BISC 1015. Principles of Human Anatomy and Physiology. 5 cr. hrs.**

Principles of Human Anatomy and Physiology is an introduction to the structures and functions of the human body. Laboratory included.

### **BISC 1030. Introduction to Dentistry. 1 cr. hr.**

An introduction to the diverse aspects of the dental profession, featuring guest speakers and hands-on laboratory techniques. S/U grade assessment. Prereq: Cons. of dept. ch.

### **BISC 1060. Chemistry for the Health Professions. 3 cr. hrs.**

An introduction to general chemistry and organic chemistry stressing those aspects necessary for the health professions. Prereq: NURS major.

### **BISC 2050. Organic Chemistry for the Health Sciences. 2 cr. hrs.**

An introduction to organic chemistry, stressing the physical properties and representative reactions of the common organic functional groups. Prereq: CHEM 1001 and CHEM 1002.

### **BISC 2070. Biochemistry for the Health Professions. 3 cr. hrs.**

Carbohydrates, lipids, proteins, enzymes, bioenergetics, metabolism of carbohydrates, lipids, proteins, and nucleotides. Emphasis placed on health and disease. Prereq: BISC 1060; or courses in general and organic chemistry; or cons. of instr.

### **BISC 2125. Human Microanatomy. 4 cr. hrs.**

A study of the microscopic structure of cells, tissues and organs of the human body. Emphasis is placed on structure-function relationships and on the interaction of various cell types, tissues and organ systems. Includes laboratory. Prereq: BIOL 1001 and Soph. stdng.; or cons. of instr.

### **BISC 2135. Human Anatomy. 4 cr. hrs.**

A regional approach to human anatomy where all body systems are integrated. Correlations between structure and function are emphasized. Laboratory included. Prereq: BIOL 1001 and Soph. stdng. or cons. of instr.

### **BISC 2150. Social Justice Issues in Health Science. 3 cr. hrs.**

Current state of the US health care system, with an emphasis on the health care safety net and access to care issues; global health issues; comparison of international health plans and the bioethics of health care rationing. Community health care providers, administrators and political advocates guest lecture to provide first-hand knowledge of the current issues and potential solutions, and serve as models for careers that make a difference. Prereq: Soph. stdng.

### **BISC 2173. Principles of Human Embryology. 3 cr. hrs.**

System by system approach to the understanding of the sequence of human embryonic and fetal development. Early events include gametogenesis, implantation and placentation are covered to give a foundation for discussing the development of major organ systems. Discusses the underlying causes of morphological errors in the development which lead to congenital malformations. Effects of harmful (teratogenic) substances early in the developmental period are stressed. Students given a basic understanding of early inductive influences on major organ systems. Prereq: Soph. stdng.

**BISC 3110. Nutritional Aspects of Health. 3 cr. hrs.**

Basic principles and fundamentals of human nutrition. Nutrients are discussed in terms of sources, absorption, metabolism and utilization, deficiency, requirements, and assessment of status. Life cycle nutrition and nutrition in disease states. Intended audience: future health care professionals. Prereq: A course in Biochemistry and BISC major; or cons. of instr. Not to be taken for credit by students who have had BISC 1010 or HEAL 2045.

**BISC 3112. Head and Neck Anatomy. 3 cr. hrs.**

Survey of neuroanatomy, sensory systems and speech, muscular and vascular systems, and osteology of the head and neck. An emphasis is placed on functional anatomy and significant clinical correlates. Laboratory included. Prereq: BISC 1015 or BISC 2135.

**BISC 3115. Human Microbiology. 3 cr. hrs.**

Cytology, physiology and genetics of bacteria, viruses, fungi and animal parasites of medical importance. Basic identification procedures. Control of microorganisms; sterilization/disinfection, chemotherapy, immunization, epidemiology. Host-parasite interactions. The nature and the responses of the immune system. Study of the major infectious diseases. Prereq: A Biochemistry course, which may be taken concurrently; or cons. of instr.

**BISC 3136. Gross Anatomy for the Biomedical Sciences. 2 cr. hrs.**

This undergraduate human gross anatomy laboratory course takes a regional approach to the dissection of human cadaveric material and includes all body structures/systems. Space reserved for Biomedical Sciences majors in good standing. Enrollment is limited based upon specimen availability. Prereq: BISC 2135 and cons. of instr.

**BISC 3150. General Pathology. 3 cr. hrs.**

The course begins with an overview of cellular degenerations, inflammation and neoplasia. Various organ systems and their primary disease states will then be presented. These systems include musculoskeletal, nervous, cardiovascular, pulmonary, reproductive, digestive, endocrine, and integument. This course is taught using lecture note handouts, Power Point, Web sites and examination objectives. Prereq: Courses in anatomy and physiology; or PPTH major; or PHAS major; or cons. of instr.

**BISC 3213. Biochemistry. 4 cr. hrs.**

The chemistry of cells in health and disease. Structure and function of proteins, carbohydrates, lipids, and nucleic acids; enzyme function, cell signaling, cellular metabolism, and biological information flow (genetics). Prereq: CHEM 2112 or CHEM 2114 both may be taken concurrently with BISC 3213.

**BISC 3340. Human and Applied Medical Genetics. 3 cr. hrs.**

Course provides an overview of genetic principles that are relevant to human health and disease. Topics include: packaging and sequence architecture of the human genome, Human Genome Project, patterns of Mendelian inheritance in humans, development, genetic alterations and metabolic disease hemoglobinopathies, immunogenetics, genetic testing and gene therapy. Consists of didactic lectures with interspersed clinical cases. Intended for students interested in a career in medical professions. Prereq: BISC 3213, which may be taken concurrently.

**BISC 3859. Evolution. 3 cr. hrs.**

Evolution consists of describing its history and analyzing its causes and mechanisms. Emphasizes the general principles of evolution, the hypotheses about the causes of evolutionary change that apply to the most organisms, and the major patterns of change that have characterized many different groups. Prereq: BIOL 1001 and BIOL 1002, a biochemistry course, and cons. of instr.

**BISC 4120. Pharmacology. 3 cr. hrs.**

This course covers the fundamentals of human pharmacology and the basic principles dictating drug action within the human body. The course focuses on the therapeutic actions and clinical applications of various drug classes with emphasis on cellular mechanisms, physiological responses, adverse reactions, and clinical indications, accompanied by general discussion on the pathological conditions for which common therapeutic agents are used. Prereq: A course in Biochemistry and BISC 1015; or a course in Biochemistry and BISC 4145.

**BISC 4130. Human Gross Anatomy. 5 cr. hrs.**

A human gross anatomy course including lecture and a cadaver dissection laboratory. Anatomy of the limbs, back, thorax, abdomen, pelvis, and head and neck is approached on a regional basis. Functional aspects of musculoskeletal structures are emphasized. Prereq: PHTH major; or PHAS major 2.

**BISC 4140. Functional Neuroanatomy. 3 cr. hrs.**

Examines the basic structure and function of the central nervous system from spinal cord to cerebral cortex. Material will be presented within both clinical and basic contexts. Based on the understanding of the normal circuitry and function of the brain, clinically relevant neurological disorders and basic neuroanatomical methods will also be explored. Laboratory included. Prereq: BISC 2135 or BISC 4130.

**BISC 4145. Human Physiology. 4 cr. hrs.**

Human physiology including blood and circulation, muscular, neuronal and sensory systems, renal and respiratory systems, digestion, metabolism, reproduction, their control by the endocrine and central nervous systems, and clinical correlates. Prereq: BISC 2135; and a course in Biochemistry.

**BISC 4160. Molecular Pathology. 3 cr. hrs.**

Cellular and molecular basis of human diseases, therapeutic interventions and current research efforts. Prereq: A course in biochemistry, which may be taken concurrently; cons. of instr.

**BISC 4165. Microbiology Laboratory. 1 cr. hr.**

Introduction to various topics of microbiology laboratory including the isolation, cultivation, enumeration and characterization of bacteria of human medical importance. Brightfield, darkfield, and phase contrast microscopy are utilized. Specialized techniques include antibiotic susceptibility testing, anaerobic cultivation and immunological assays. Prereq: BISC 7410 which may be taken concurrently; or BISC 3115; cons. of instr.

**BISC 4930. Special Topics in Biomedical Science. 1-5 cr. hr.**

Offered as an experimental course to evaluate and determine if a course should be incorporated into the regular curriculum of a program, or courses in the approval process pipeline, but not yet officially approved. Once the same course has been offered twice as a Special Topic, it cannot be offered again until it moves through the curriculum approval process and is approved with a regular curriculum course number.

**BISC 4931. Topics in Biomedical Sciences. 1-3 cr. hr.**

Selected topics in biomedical sciences. Specific topics will be designated in the Schedule of Classes.

**BISC 4986. Internship in Biomedical Sciences. 1-3 cr. hr.**

Co-op or intern experience in the biomedical industry. Features educational activity and productive work related to health care delivery or industrial or administrative aspects of health care. S/U grade assessment. Prereq: Cons. of dept. ch.; cons. of Internship Director.

**BISC 4995. Independent Study in Biomedical Sciences. 1-6 cr. hr.**

Research on a selected topic under the direction of a faculty member of the Department of Biomedical Sciences. Prereq: Cons. of dept. ch.

## Clinical Laboratory Science

### **CLLS 1001. Introduction to Clinical Laboratory Methods. 1 cr. hr.**

Fundamental concepts in laboratory analysis and data correlation. Topics limited to specific disease entities. Laboratory exercises include certain aspects of clinical chemistry, clinical hematology and clinical microbiology. (Saturdays). Prereq: Enrolled in CLLS Young Scholar Program.

### **CLLS 1010. Concepts in Clinical Laboratory Medicine. 3 cr. hrs.**

Introduction to pathophysiology and the basic laboratory techniques of clinical pathology. Lecture and laboratory sessions limited to selected topics in hematology, immunohematology and clinical chemistry. Prereq: CLLS major and BIOL 1001, which may be taken concurrently, and CHEM 1001, which may be taken concurrently; High school chemistry and biology with laboratory.

### **CLLS 1100. Guided Study in Clinical Laboratory Science. 0-2 cr. hrs.**

Analysis of selected topics under faculty supervision. Primarily for undergraduate students who wish to enhance their knowledge in selected disciplines through guided study. 0 credit will be SNC/UNC grade assessment; 1-2 credits will be graded. Prereq: CLLS major; or cons. of dept. ch.

### **CLLS 2050. Forensic Science. 3 cr. hrs.**

An introduction to the principles of forensic science. An overview of criminal law, the crime scene, evidence collection and processing, forensic medicine (pathology) drugs and toxins, firearms, questioned documents, trace evidence, fingerprints and DNA as evidence. Emphasis on the investigatory role of the forensic scientist. Laboratory sessions reinforce information from lectures and provide hands-on experiences, including homicide scene investigation techniques, molecular biology procedures.

### **CLLS 2060. Public Health. 3 cr. hrs.**

An exploration and overview of public health medicine and its contribution to prevention and control of disease. Provides familiarization with epidemiology surveillance and investigation methods, including statistical tools. Included is an introduction to the following components of public health medicine: communicable and non-communicable disease diagnosis and monitoring, environmental and foodborne health concerns, social and behavioral health issues, community health services, and the bioterrorism response network.

### **CLLS 3124. Medical Bacteriology. 4 cr. hrs.**

Emphasis on the theoretical foundations and methodologies needed in a medical bacteriology laboratory. Topics include: cultivation, isolation, microscopy, and antibiotic susceptibility testing. Morphological, cultural, biochemical, and immunological characteristics of bacteria examined as a basis for their differentiation and identification. Epidemiology, pathogenicity, and treatment of bacterial infections explored. Concepts of the humoral immune response included. Prereq: CLLS major and Biochemistry, which may be taken concurrently.

### **CLLS 3127. Medical Microbiology. 4 cr. hrs.**

Study of the identification and differentiation of pathogens and normal flora of humans based upon correlation of morphological, biochemical, immunological, and molecular characteristics. Epidemiology, pathogenicity, and treatment modalities are also investigated. Fungi, parasites, viruses, and bacteria are studied along with concepts of the cellular immune response. Laboratory involves isolation and identification of medically important microorganisms, including proper patient specimen processing. Prereq: CLLS major and CLLS 3124.



**CLLS 3140. Laboratory Instrumentation. 3 cr. hrs.**

Application of the principles of basic electronics, spectrophotometry, flurometry, electrochemistry, flame emission and atomic absorption to laboratory instruments used in diagnostic and research laboratories. Selected laboratory experiments investigate these applications as related to clinical chemistry and hematology. Background in quality assurance is provided. Focuses on team problem-solving and instrument trouble-shooting. Prereq: CLLS major.

**CLLS 3160. Molecular Diagnostics: Laboratory Techniques. 3 cr. hrs.**

Medical and forensic molecular biology, including a review of DNA/RNA structure and function, will be covered. Relevant laboratory techniques include isolation of genomic DNA from various tissue samples, PCR RFLP, molecular diagnosis of cancer, detection of infectious agents and identification of inherited diseases. Prereq: BIOL 4101 or BISC 2070 or BISC 3213. Can be taken concurrently.

**CLLS 3173. Analytical and Clinical Chemistry. 4 cr. hrs.**

Concepts of analytical chemistry including mathematical treatment of data, chemical and acid-base equilibria, buffers and electrochemistry. Application of theoretical aspects to measurement and evaluation of acid-base and electrolyte balance in the human body. Principles and application of electrophoretic and chromatographic analysis of clinical specimens. The components of blood and body fluids and their chemical analysis in disease states. Selected laboratory exercises emphasize quality assurance and integration of automated and manual clinical methods. Prereq: Jr. stndg. and CLLS major.

**CLLS 3174. Clinical Hematology 1. 4 cr. hrs.**

Study of identification and differentiation of blood and bone marrow cells with emphasis on morphology, function and pathology of these cells. Included is the study of blood parasites. Principles of methodologies used and their relationship to diagnosis and treatment of disease. Laboratory provides experience in identification of cellular elements in normal and disease states. Prereq: CLLS major.

**CLLS 4180. Basic Concepts in Clinical Education Methods & Practicum. 1 cr. hr.**

Educational concepts especially appropriate to instruction in a clinical setting using clinical materials. The concepts discussed include: writing learning objectives, learning styles, testing and evaluation methods and use of audio-visuals. Prereq: Sr. stndg. and CLLS major; individual assignments to clinical laboratory affiliations.

**CLLS 4181. Modern Management Concepts for the Clinical Laboratory & Practicum. 1 cr. hr.**

Comparison of management theories and styles for effective leadership. Principles and methods of communication essential to the delivery of quality health care. Strategic financial planning ensuring cost effectiveness in the diagnostic laboratory. Statistical analysis comparing alternative methodologies for selection of reliable laboratory procedures. Selected projects relating managerial practices to clinical laboratory organization and use of laboratory data systems for health care delivery. Prereq: Sr. stndg. and CLLS major; individual assignments to clinical laboratory affiliations.

**CLLS 4183. Clinical Chemistry and Practicum. 6 cr. hrs.**

The chemical constituents of blood and other body fluids in health and disease. Principles of the methods used in qualitative and quantitative determination of these constituents. Treatment of the theoretical aspects of instrumentation used in these determinations. Prereq: Sr. stndg. and CLLS major; individual assignments to clinical laboratory affiliations.

**CLLS 4184. Clinical Hematology 2 and Practicum. 4 cr. hrs.**

Quantitative and qualitative study of blood, bone marrow and body fluid cells and alterations present in disease. Principles of procedures used. Methods of obtaining and preserving blood specimens with consideration of the theory and practice of aseptic technique. Prereq: Sr. stndg. and CLLS major; individual assignments to clinical laboratory affiliations.

**CLLS 4185. Clinical Hemostasis and Practicum. 3 cr. hrs.**

The components in the blood related to the hemostatic mechanisms, the principles of the procedures involved and their relationship to the diagnosis and treatment of disease. Prereq: Sr. stdng. and CLLS major; individual assignments to clinical laboratory affiliations.

**CLLS 4186. Clinical Immunohematology and Practicum. 6 cr. hrs.**

Therapeutic and diagnostic aspects of immunohematology. Aspects of blood transfusion and of methods used in preservation and selection of properly matched blood for transfusion. Prereq: Sr. stdng. and CLLS major; individual assignments to clinical laboratory affiliations.

**CLLS 4187. Clinical Immunology and Serology and Practicum. 2 cr. hrs.**

The mechanisms of resistance to disease, especially the antigen-antibody reactions and the diagnostic procedures used in determining this resistance. Prereq: Sr. stdng. and CLLS major; individual assignments to clinical laboratory affiliations.

**CLLS 4188. Clinical Microbiology and Practicum. 6 cr. hrs.**

Advanced study of pathogenic and normal flora microorganisms having medical importance. Includes methods for obtaining and handling specimens for culture as well as principles of current instrumentation. Identification protocol include cultural, morphological, biochemical, immunological, and molecular characteristics. Pathophysiology of infectious diseases caused by bacteria, fungi, parasites and viruses is examined. Prereq: Sr. stdng. and CLLS major; individual assignments to clinical laboratory affiliations.

**CLLS 4189. Clinical Urinology and Practicum. 2 cr. hrs.**

Physical, chemical and microscopic study of urine with emphasis on the changes exhibited in disease with related physiology. Prereq: Sr. stdng. and CLLS major; individual assignments to clinical laboratory affiliations.

**CLLS 4931. Topics in Clinical Laboratory Science. 1-4 cr. hr.**

Selected topics in clinical laboratory science. Specific topics determined each term.

**CLLS 4995. Independent Study in Clinical Laboratory Studies. 1-4 cr. hr.**

Prereq: Cons. of dept. ch.

## Exercise Physiology

**EXPH 1001. Introduction to Exercise Physiology. 2 cr. hrs.**

Exposure to the fields of exercise science. Current topics of interest including certification requirements and professional development. Prereq: ATTR major; EXPH major; or cons. of instr.

**EXPH 1010. Emergency Care, CPR and AED. 2 cr. hrs.**

Lecture/lab. An overview of principles and techniques of first aid, emergency care and cardiopulmonary resuscitation. Competency in skills leads to American Heart Association Health Care Provider CPR and first aid certification. Prereq: EXPH major; or ATTR major; or cons. of instr.

**EXPH 1050. Surface Anatomy and Palpation. 1 cr. hr.**

Laboratory course designed to define and analyze the forces influencing movements, describe body planes and axes, and identify anatomical structures (muscles and joints) through palpation. Prereq: EXPH Major; or ATTR Major; or cons. of instr.; anatomy and physiology or concurrent with anatomy and physiology.

**EXPH 2106. Cognitive and Motor Learning. 3 cr. hrs.**

Lecture/lab. A study of the principles of human motor learning development from infancy through adulthood. Instructional emphasis is given to those factors which have implications for exercise and training. Prereq: EXPH major; ATTR major; or cons. of instr.

**EXPH 2110. Kinesiology/Biomechanics. 4 cr. hrs.**

Lecture/lab. Study of human motion emphasizing skeletal structure. Mechanical principles which influence human exercise are examined. Identification of the origin, insertion and function of major muscles is included along with surface anatomy. Prereq: EXPH 1050, EXPH 2115, and BISC 1015 must be completed with a grade of C or better prior to enrolling in this course.

**EXPH 2115. Exercise Physiology and Bioenergetics. 5 cr. hrs.**

Lecture/lab. Protein, carbohydrate and lipid metabolism in relation to energy production including anaerobic and oxidative pathways with an emphasis on exercise and health. A study of the effects of exercise on the major systems of the human body, including the cardiorespiratory and neuromuscular systems. Prereq: BISC 1015 and CHEM 1001 and CHEM 1002 which may be taken concurrently, ATTR major; EXPH major; or cons. of dept. ch.

**EXPH 2190. Scientific Principles of Strength and Conditioning. 3 cr. hrs.**

Lecture/lab. This course reviews the research and applications of disciplines such as physiology and biomechanics. Specific topics include program design, exercise techniques, strength, power, speed and flexibility development, physical testing, and training adaptations. Prereq: EXPH 2115.

**EXPH 2931. Topics in Exercise Physiology. 1-4 cr. hr.**

Selected topics, not a part of the regular course work taught because of a special need, interest, or opportunity. Prereq: Jr. stdng. and EXPH major; or Jr. stdng. and ATTR major; or cons. of instr.

**EXPH 3100. Exercise Leadership. 3 cr. hrs.**

Lecture/lab. A study of the necessary leadership qualities and skills expected for leading exercise activities. Will develop expertise in the instruction of a wide variety of fitness related programs. Prereq: EXPH 2110 and EXPH 2115; and a course in anatomy and physiology.

**EXPH 3170. Exercise Program Management. 3 cr. hrs.**

Study of the strategies and considerations involved in the successful management of a fitness facility. Areas include program planning, budgeting, facility design and organization. Prereq: EXPH major; ATTR major; or cons. of instr.

**EXPH 3180. Exercise Testing, Prescription and EKG. 4 cr. hrs.**

Lecture/lab. Practical experience in fitness testing/assessment, program design and instruction in a wide variety of fitness related programs. Emphasis on test protocols for evaluating health related components of physical fitness. Prereq: EXPH 2115.

**EXPH 3189. Nutrition and Exercise Performance. 3-4 cr. hrs.**

Lecture. A study of the basic nutritional concepts, principles and current issues. Emphasis on nutrition for training and conditioning related to health and wellness, including ergogenic aids. Prereq: EXPH 2115.

**EXPH 3986. Exercise Physiology Practicum 1. 2 cr. hrs.**

Work experience in approved fitness-related agencies. Experience may include fitness testing, evaluation, exercise prescription, instruction, leadership or management in different settings. May be dependent on space. Current CPR and First Aid certifications. S/U grade assessment. Prereq: Jr. stdng., EXPH major, EXPH 3100, which may be taken concurrently, EXPH 2110, EXPH 2115, and EXPH 2190, which may be taken concurrently.

**EXPH 4187. Exercise Physiology for Special Populations. 3 cr. hrs.**

Lecture. A study of program modifications and techniques for various populations; which may include for example exercise prescription throughout the life span. Prereq: EXPH 2115 and EXPH 3180, or cons. of dept. ch.

**EXPH 4190. Advanced Strength & Conditioning. 3 cr. hrs.**

Covers advanced strength and conditioning topics including: plyometrics, speed and agility development, testing, program design, linear and non-linear periodization and potentiation phenomenon. Prereq: EXPH 2115, EXPH 2190 and cons. of instr.

**EXPH 4192. Advanced Exercise Physiology. 4 cr. hrs.**

Lecture/lab. Advanced course in the study of the body's response to physical activity. Focus is on laboratory techniques standard in exercise physiology research. Prereq: Sr. stdng., EXPH major or ATTR major, EXPH 2115 and anatomy and physiology; or cons. of instr.

**EXPH 4986. Exercise Physiology Practicum 2. 7-16 cr. hrs.**

Work experience in approved fitness-related agencies. Experience may include fitness testing, evaluation, exercise prescription, instruction. Leadership or management in different settings. May be dependent on space. S/U grade assessment. Prereq: Cons. of program dir., Sr. stdng, EXPH major, current CPR and First Aid certifications and satisfactory completion of all EXPH major course work with a grade of C or better.

**EXPH 4995. Independent Study in Exercise Physiology. 1-4 cr. hr.**

Independent study under the direction of faculty. Prereq: Cons. of instr.

**Health Sciences****HESC 1931. Topics in Health Sciences. 0-3 cr. hrs.**

Selected topics in health sciences. Specific topics will be designated in the Schedule of Classes. 0 credit will be SNC/UNC grade assessment; 1-3 credits will be graded.

**HESC 4995. Independent Study in Health Sciences. 1-3 cr. hr.**

Prereq: Cons. of dept. ch. and cons. of assistant dean.

**Physician Assistant Studies****PHAS 4117. Cultural Diversity in Health Care. 3 cr. hrs.**

Introduction to healthcare delivery to diverse patient populations. Explores various culturally influenced perspectives on health and illness as well as identifying health disparities among certain cultural groups and minority populations. Students work toward becoming culturally competent practitioners by exploring their personal reactions to culturally based medical scenarios.

**Physical Therapy****PHTH 1001. Introduction to Physical Therapy. 1 cr. hr.**

Lecture course with two components. The first will focus on medical terminology pertinent to the health care professions. The second will provide career exposure to physical therapy and include current topics of interest in the field. Prereq: Second year Direct-Admit PT students and others by cons. of instr.

**PHTH 4512. Culture and Disability. 3 cr. hrs.**

The culture of disability, as a product of intrinsic factors of the person (spiritual beliefs and cultural practices) and those extrinsic factors in society (prejudice, stigma and discrimination) and the environment (architectural barriers) will be examined. The human dignity and civil rights of persons with disability, especially for the ever-expanding population of persons aged 65 and older, will be emphasized. Students will reflect on their own values, beliefs, and guiding life principles (Vocational Discernment) which shape their interactions and behaviors as professional health-care providers. The role of positive emotions, having choices, hope, and spiritual resolve as a foundation for the developing field of rehabilitation medicine called "Cardio-Psycho-Neuro-Immunology" will be a focus in this course. Prereq: Cons. of instr.

## Speech Pathology Audiology

**SPPA 1001. Introduction to Speech-Language Pathology and Audiology. 3 cr. hrs.**

An introduction to the disorders of speech, language, and hearing with emphasis on types, etiology, and symptoms.

**SPPA 1100. Anatomy and Physiology of the Speech Mechanism. 3 cr. hrs.**

Anatomy and physiology of the speech production mechanism, including bases for phonation, articulation, breathing, and neural control. Prereq: SPPA major; or SPPA minor; or SPLA major; or cons. of dept. ch.

**SPPA 2120. Phonetics and Phonology. 3 cr. hrs.**

Introduction to the study of speech sound production. Descriptive systems for characterizing production of speech sounds and speech errors. Phonetic transcription of normal and disordered speech. Phonetic variation associated with dialects of English. Manual and computerized methods of phonological analysis. Prereq: SPPA major; or SPPA minor; or SPLA major; or cons. of dept. ch.

**SPPA 2130. Child Language Development. 3 cr. hrs.**

Overview of general linguistic concepts and their application to the acquisition of language by young children. Stages of language development from infancy to early school age. Contributions of biological, social, linguistic, and cognitive factors to language learning. The role of input from conversation and media sources. Prereq: SPPA major; or SPLA major; or cons. of dept. ch.

**SPPA 2210. Child Language Disorders. 3 cr. hrs.**

Survey of the linguistic and developmental characteristics of children with special needs who have primary or secondary difficulties acquiring their native language. An overview of descriptive assessment of language profiles, and language intervention issues. Multicultural issues related to child language differences and disorders also are studied. Prereq: SPPA major and SPPA 1001 and SPPA 2130; or SPLA major and SPPA 1001 and SPPA 2130; or cons. of dept. ch.

**SPPA 2220. Child Speech and Sound Disorders. 3 cr. hrs.**

Overview of normal speech sound development and characterization of children with speech sound disorders. Introduction to methods of standardized testing, linguistic assessment, and treatment of speech sound disorders. Dialectal variation and its effect on clinical procedures. Prereq: SPPA major and SPPA 1001 and SPPA 2120 and SPPA 1100; or SPLA major and SPPA 1001 and SPPA 2120 and SPPA 1100; or cons. of dept. ch.

**SPPA 3140. Speech Science. 3 cr. hrs.**

Study of the speech code. Linguistic, physiological, and acoustical components of the code are considered in relation to both speech production and recognition. Instrumentation useful in the clinical and laboratory analysis of speech is considered. Prereq: SPPA major and SPPA 1100; or SPLA major and SPPA 1100; or cons. of dept. ch.

**SPPA 3510. Introduction to Audiology. 3 cr. hrs.**

Principles and techniques of audiometric testing; study of basic acoustics; review of anatomy and physiology of the hearing mechanism; introduction to pathologic conditions of the hearing mechanism; laboratory work in basic audiometric test procedures. Prereq: SPPA major and SPPA 1100 and SPPA 3140; or SPLA major and SPPA 1100 and SPPA 3140; or cons. of dept. ch.

**SPPA 3710. Intervention Methods in Speech-Language Pathology. 3 cr. hrs.**

Clinical procedures and management techniques for diagnosis and remediation of clients in a variety of clinical settings are taught. Topic areas include issues and ethics in serving birth to three, multicultural and developmentally disabled populations. Other topics include report writing/documentation, quality assurance, private practice and professional organizations. Prereq: Cons. of dept. ch.; and SPPA major and SPPA 2220; or SPLA major and SPPA 2220; SPPA 3964 must be taken concurrently.

**SPPA 3964. Practicum in Speech-Language Pathology 1: Campus Clinic. 1 cr. hr.**

S/U grade assessment. Prereq: SPPA major; or SPLA major; or cons. of dept. ch.; SPPA 3710 must be taken concurrently.

**SPPA 4230. Stuttering and Other Fluency Disorders. 3 cr. hrs.**

Introduction to the symptomatology, phenomenology, etiology, assessment and management of stuttering and other fluency disorders in children and adults. Prereq: SPPA major and SPPA 1001; or SPLA major and SPPA 1001; or cons. of dept. ch.

**SPPA 4310. Introduction to Neurological Disorders. 3 cr. hrs.**

The basics of neurology and an overview of common neurogenic disorders of communication including aphasia, apraxia, dysarthria, dementia and linguistic sequela of traumatic brain injuries will be presented. Prereq: SPPA major and SPPA 1100; or SPLA major and SPPA 1100; or cons. of dept. ch.

**SPPA 4520. Hearing Disorders. 3 cr. hrs.**

Extensive study of hearing disorders and the psychological and social implications of hearing impairment. Habilitation/rehabilitation strategies are discussed. Prereq: SPPA major and SPPA 3510; or SPLA major and SPPA 3510; or cons. of dept. ch.

**SPPA 4530. Audiological Rehabilitation. 3 cr. hrs.**

An in-depth look at the process of adult aural rehabilitation and how amplification, assistive listening devices, sensory aids, visual communication training, auditory training and counseling contribute to that process. Prereq: SPPA major and SPPA 4520; or SPLA major and SPPA 4520; or cons. of instr. and cons. of dept. ch.

**SPPA 4610. Multicultural Issues for Speech-Language Pathologists. 3 cr. hrs.**

Offered for undergraduate or graduate credit. The study of culture and communication in linguistically diverse populations [i.e., Non-Standard American English speakers, Native Americans, (with emphasis on Wisconsin Native tribes) Asians, and Latinos]. The course will include L1 and L2 acquisition profiles and information pertaining to service delivery with non-native English speakers. The U.S. Latino population will be emphasized. Students' knowledge and understanding of racism will be explored. This course will meet the multicultural requirements for the Wisconsin Department of Public Instruction licensing in speech-language pathology. Prereq: Jr. stdng.

**SPPA 4720. Diagnostic Methods in Speech-Language Pathology. 3 cr. hrs.**

The purpose of this course is to provide the students with an understanding of the components inherent in the diagnostic process. These include but are not limited to: a) an overview of diagnostic models, b) sources of delays and disorders, c) purposes of assessment, d) interviewing techniques, e) testing and measurement caveats, f) framework for analysis of the data, g) interpretation of results to families or referral sources, and h) report writing. Prereq: SPLA student standing or cons. of dept. ch.

**SPPA 4961. Special Institute/Workshop/  
Project:. 1-3 cr. hr.**

Project 1-3 sem. hrs.

**SPPA 4964. Practicum in Speech-Language  
Pathology 2: Campus Clinic. 1 cr. hr.**

S/U grade assessment. Prereq: SPPA major and SPPA 3964; or SPLA major and SPPA 3964; or SPPA 3964 and cons. of dept. ch.

**SPPA 4965. Practicum in Audiology: Campus  
Clinic. 1 cr. hr.**

Supervised clinical experience with hearing-impaired individuals both on campus and in off-campus affiliated centers. May be repeated up to a maximum of three credits. S/U grade assessment. Prereq: SPPA major and SPPA 3510 and cons. of instr.; or SPLA major and SPPA 3510 and cons. of instr.; or cons. of instr. and cons. of dept. ch.

**SPPA 4995. Independent Study in Speech-  
Language Pathology and Audiology. 1-3 cr. hr.**

Prereq: Cons. of dept. ch.

**SPPA 4999. Senior Thesis. 1-3 cr. hr.**

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Prereq: Cons. of dept. ch.

## College of Nursing

### From the Dean

College of Nursing website (<http://www.marquette.edu/nursing/index.shtml>)

Welcome!

Marquette University College of Nursing, founded in 1936, has more than 8,000 alumni making a difference in health care every day, nationwide. Marquette nurses embody the Jesuit traditions of living lives of faith, promoting excellence, becoming leaders and serving others. As such, Marquette nursing is an integral part of the university's Catholic, Jesuit mission.

Marquette faculty are expert teachers, recognized clinicians and accomplished researchers. They are at the forefront of developing evidence on which nurses base their practice. All of these individuals come together in the classroom to teach, mentor and demonstrate the highest level of professional nursing practice for our students.

Marquette offers many innovative programs that address the challenges seen in health care today: baccalaureate programs, master of science in nursing, post-master's certificates, doctorate of nursing practice and doctor of philosophy. All programs uniquely qualify the Marquette graduate to assume leadership roles in the profession.

Marquette nursing programs are accredited by the Commission on Collegiate Nursing Education, as well as specialty accreditation from the American College of Nurse-Midwifery for the Nurse-Midwifery program. Marquette meets the quality standards for initial licensure as a registered nurse and certification for roles as health care systems leaders, clinical nurse leaders, or advanced practice nurses in: adult, older adult, children or nurse-midwifery.

Margaret Faut Callahan, CRNA, Ph.D., FAAN  
Dean, College of Nursing

## College Mission Statement

The mission of the College of Nursing emerges from the mission of the university to provide a rigorous liberal education grounded in Judeo-Christian ideals and disciplined in the Jesuit tradition. Marquette University nursing students are prepared for lives of faith and service and to promote the worth of all persons, to assure professional competence, to respect the pursuit for truth, and to uphold a high standard of personal integrity. The faculty recognize their central responsibilities as influencing health, health care, and health care policy through quality instructional programs, generation and dissemination of nursing knowledge, active involvement in the community and the profession, and collaborative endeavors. Faculty recognize caring as essential to preparation for professional nursing practice. This preparation includes liberal and professional knowledge; clinical, cognitive and leadership skills; and personal and professional values.



## Degrees Offered

### Degrees Offered

Marquette University confers the degree bachelor of science in nursing on those students who have satisfactorily completed the prescribed curriculum of the College of Nursing.

The degrees master of science in nursing, doctor of nursing practice and doctor of philosophy are offered through the Marquette University Graduate School. Several post-master's certificates are also offered. Details on the graduate programs in nursing are contained in the Graduate Bulletin.

## Admission Requirements

Applicants to the College of Nursing are expected to fulfill the admission requirements listed in the university Admission and Readmission (p. 16) section of this bulletin. Acceptance as a freshman in the College of Nursing assures placement in clinical nursing courses provided the student remains in good standing and follows the prescribed program plan.

Students who interrupt their academic program for two or more consecutive terms must meet the graduation requirements, which prevail at the date of their readmission.

# Graduation Requirements

## Amount and Quality of Work

A candidate for a baccalaureate degree in nursing must have completed 128 credits including all the requirements in the University Core of Common Studies (UCCS) and the College of Nursing curriculum. The candidate shall have earned quality points which equal at least two times the number of credit hours credited and shall have at least a 2.000 grade point average per term actually taken at Marquette.

## University Core of Common Studies and College Curriculum Requirements

The College of Nursing builds on the foundational educational experience provided by the University Core of Common Studies. It does this through a college curriculum that amplifies and deepens the knowledge, skills and values imparted to students in the nine knowledge areas of the UCCS. Nursing students are required to complete 128 credits for the Bachelor of Science in Nursing Degree.

### Rhetoric (R) (6 credits)

|           |                            |   |
|-----------|----------------------------|---|
| ENGL 1001 | Rhetoric and Composition 1 | 3 |
| ENGL 1002 | Rhetoric and Composition 2 | 3 |

### Mathematical Reasoning (MR) (3 credits)

|  |   |
|--|---|
| Course List All UCCS approved courses; Statistics recommended for students considering graduate education. | 3 |
|--|---|

### Individual and Social Behavior (ISB) (9 credits)

|           |   |   |
|-----------|---|---|
| PSYC 1001 | General Psychology  | 3 |
| PSYC 2101 | Introduction to Life-Span Developmental Psychology for Nursing Students | 3 |
| SOCI 2200 | The Family  | 3 |

### Diverse Cultures (DC) (3 credits)

|           |                    |   |
|-----------|--------------------|---|
| HEAL 1025 | Culture and Health | 3 |
|-----------|--------------------|---|

**Literature and Performing Arts (LPA) (3 credits)**

Any UCCS course approved for college curriculum credit. 3

**Histories of Cultures and Societies (HCS) (3 credits)**

Any UCCS course approved for college curriculum credit. 3

**Science and Nature (SN) (5 credits)**

BISC 1015 Principles of Human Anatomy and Physiology 5

**Human Nature and Ethics (HNE) (6 credits)**

PHIL 1001 Philosophy of Human Nature 3

PHIL 2310 Theory of Ethics 3

**Theology (T) (6 credits)**

THEO 1001 Introduction to Theology 3

Any additional UCCS course approved for Theology 3

**General Electives (3 credits)**

Any General Elective course. 3

**Other Required Science Courses (9 credits)**

BISC 1060 Chemistry for the Health Professions 3

BISC 2070 Biochemistry for the Health Professions 3

BISC 3115 Human Microbiology 3

**Major in Nursing**

Marquette offers six bachelor of science in nursing programs. Students may also choose to minor in an area of study (e.g., foreign language). Specialized program plans are developed for the minor in conjunction with the academic advising coordinator.

## **Major in Nursing with a Second Major in Psychology**

College of Nursing students can elect to have Psychology as a second major. Students who elect this program of study would graduate with a major in Nursing and a second major in Psychology. The program can be completed in four years requiring some summer course work. The curriculum plan indicating course requirements and sequencing is available from the College of Nursing, Clark Hall, and (414) 288-3827

## **Minor in Health Studies**

The College of Nursing offers an 18-credit-hour minor in health studies open to all other undergraduate students at Marquette University. The minor is not available to students in the College of Nursing.

## Academic Regulations

Students in the College of Nursing are expected to comply with the academic requirements and regulations listed in the university section of this bulletin.

### Progression

#### Grade Requirements

The following grade requirements must be met for progression into and through the clinical portion of the nursing major.

1. A grade of C or better in all required NURS and HEAL courses and in the following courses: BISC 1015 Principles of Human Anatomy and Physiology, BISC 1060 Chemistry for the Health Professions, BISC 2070 Biochemistry for the Health Professions, BISC 3115 Human Microbiology, PHIL 2310 Theory of Ethics, PSYC 1001 General Psychology, PSYC 2101 Introduction to Life-Span Developmental Psychology for Nursing Students and SOCI 2200 The Family.
2. A grade of D or better for all other required courses not listed above.
3. Any I, X, IX grade which is not removed by the required time (see academic calendar) will be viewed as an F.
4. A student who earns less than the required grades in two required courses as defined above will be required to withdraw from the College of Nursing.

#### Additional Requirements

1. Students must have a 2.000 cumulative grade point average to enroll in NURS 2000 Health Assessment or NURS 2075 Foundations of Nursing Practice and to continue to progress in the nursing program.
2. No required cognate or required nursing course may be repeated more than one time, and a student may only repeat two classes.
3. Permission to repeat a required nursing course must be formally requested from the associate dean for undergraduate programs by the student, before beginning the repeated course.
4. All students are required by the Undergraduate Program and Curriculum Committee to complete external, standardized, comprehensive nursing examinations as a condition of graduation. (Fee required for these examinations.)
5. Students must meet Health Requirements, Criminal Background check and CPR certification as specified in section below.

### Course Progression Requirements

#### Progression into NURS 2000 Health Assessment

The following required courses or their equivalents must be completed prior to entering NURS 2000 Health Assessment:

|           |  |   |
|-----------|--|---|
| BISC 1060 | Chemistry for the Health Professions                           | 3 |
| BISC 2070 | Biochemistry for the Health Professions                        | 3 |
| BISC 1015 | Principles of Human Anatomy and Physiology                     | 5 |
| PSYC 1001 | General Psychology   | 3 |
| NURS 1000 | Dimensions of Professional Nursing                             | 3 |
| NURS 1000 | Dimensions of Professional Nursing (may be taken concurrently) | 3 |

### **Progression into NURS 2075 Foundations of Nursing Practice**

The following required courses or their equivalents must be completed prior to entering NURS 2075 Foundations of Nursing Practice:

|           |                                  |   |
|-----------|----------------------------------|---|
| NURS 2000 | Health Assessment                | 3 |
| BISC 3115 | Human Microbiology               | 3 |
| HEAL 2045 | Normal and Therapeutic Nutrition | 3 |

### **Progression into NURS 3100 Pathophysiology 2 through NURS 3501 Mental Health Nursing--Practicum**

The following required courses or their equivalents must be completed prior to entering courses NURS 3100 Pathophysiology 2 through NURS 3501 Mental Health Nursing--Practicum:

|           |   |   |
|-----------|---|---|
| NURS 2075 | Foundations of Nursing Practice   | 3 |
| NURS 2100 | Pathophysiology 1   | 3 |
| NURS 2110 | Pharmacotherapeutics for Nursing Practice                               | 3 |
| HEAL 1025 | Culture and Health  | 3 |
| PSYC 2101 | Introduction to Life-Span Developmental Psychology for Nursing Students | 3 |
| SOCI 2200 | The Family  | 3 |

### **Progression into NURS 4300 Nursing Care of the Acutely Ill Adult--Theory or Higher Nursing Courses**

The following required cognate and nursing courses or their equivalents must be completed prior to entering NURS 4300 Nursing Care of the Acutely Ill Adult--Theory or higher nursing courses:

|           |                                     |   |
|-----------|-------------------------------------|---|
| NURS 3100 | Pathophysiology 2                   | 3 |
| NURS 3300 | Nursing Care of Adults -- Theory    | 3 |
| NURS 3301 | Nursing Care of Adults -- Practicum | 3 |

|           |  |   |
|-----------|--|---|
| NURS 3400 | Childbearing Family Nursing--Theory    | 3 |
| NURS 3401 | Childbearing Family Nursing--Practicum | 3 |
| NURS 3150 | Essentials of Gerontological Nursing   | 3 |
| NURS 3500 | Mental Health Nursing--Theory          | 3 |
| NURS 3501 | Mental Health Nursing--Practicum       | 3 |

All other required courses must be completed prior to graduation.

**Note:** A student who withdraws from a theory course that has a corresponding clinical course must also withdraw from that clinical course.

## Withdrawal from the Nursing Program

The following criteria are used in requiring a student to withdraw from the nursing program:

1. If the student has earned less than the required grades in two required courses as defined in the general progression requirements.
2. If the student has less than a 2.000 cumulative grade point average effective at the end of the freshman year or at any time thereafter.
3. If the student's performance suggests that the student is unlikely to succeed in the program.

No student in nursing is required to withdraw without a careful review of his or her entire record and total overall performance as well as any extenuating circumstances that might exist. See Appeals Procedures in this section for a description of the procedure for appealing a termination decision.

## Attendance

Attendance is mandatory in all scheduled classes and practica. Absences place students in academic jeopardy. If absent, progress and continuation in the course may be at risk. Students who anticipate missing one or more class periods should contact the instructor ahead of time, just as they should contact their instructor as soon as possible after an absence. Students are responsible for monitoring their absences during the term.

## Theory Courses

An instructor or college office may withdraw a student from a nursing theory (non-clinical) course due to excessive absences and assign a grade of WA (Withdrawn-Excessive Absences) if the following maximums are exceeded:

**Absence:** In a 2 credit course, maximum of three class hours.

In a 3 credit course, maximum of four class hours.

In a 4 credit course, maximum of five class hours.

**Tardiness:** Tardiness of greater than ten minutes is counted as one absence.



## Laboratory/Clinical Courses

An instructor or college office may withdraw a student from a nursing laboratory or clinical course due to excessive absences and assign a grade of WA (Withdrawn-Excessive Absences) if the following absences or tardiness are exceeded.

**Absence:** Two absences from scheduled nursing laboratory or clinical experience regardless of time involved or clinical allocation.

**Tardiness:** Tardiness of greater than 30 minutes in a scheduled nursing laboratory or clinical experience to be counted as one absence at the discretion of the instructor.

**Note:** Regardless of attendance, a student may fail a practicum at any time during the semester for either a pattern of unsafe nursing behavior or a particularly serious incident of unsafe nursing behavior. At the faculty's discretion a learning plan may be put in place based upon the student's performance. Once a student is informed that s/he is failing a clinical course withdrawal from that course is no longer an option.

Regardless of the reason for the absence, **students are responsible** for learning what happened in class. In nursing theory courses each instructor determines whether or not students will have the opportunity to make up missed work. In nursing laboratory and clinical courses, make up time and assignments will be required for all absence and tardiness.

For additional information, refer to the University Attendance Policy (p. 62) .

## Appeals Procedures

### Grade Appeals

Undergraduate students may appeal any final course grade that the student believes to be in significant violation of clearly established written policies, a result of improper procedures, or discriminatory. Before initiating a formal grade appeal the student must consult with the instructor assigning the grade and present evidence why the student believes the grade to be in error. If this does not lead to resolution the student may initiate, in writing, a formal grade appeal. To be considered the written appeal must be submitted no later than the final day officially scheduled for the removal of incompletes, approximately four weeks after the beginning of the academic semester immediately following the term in which the grade was assigned. However, it may be in the student's best interest to appeal sooner than this deadline if his/her academic progress is dependent on the outcome of the appeal. In addition, the student should consult with the college or school offering the course for which the grade is being appealed to determine if other requirements for the written appeal are in force.

The written appeal must be submitted to the associate dean of the undergraduate program. The written appeal must provide the reason(s) the student believes the recorded grade is incorrect. The student may present evidence of his/her performance and may also request that all other pertinent materials be supplied by the instructor. The associate dean will collect and analyze the evidence in a timely manner. Evidence will be gathered through consultations with the instructor, the student and any witnesses. These consultations may be in person, by phone or by electronic means. Hard copies of relevant documents may also be requested. The associate dean will evaluate the appeal or choose to designate an ad hoc committee for this purpose.

If an ad hoc committee is appointed they will:

1. Consider written course work.
2. Consult with the faculty member.
3. Consult with the student.

4. Deliberate in closed sessions.
5. Make a recommendation regarding the appeal to the associate dean.

The associate dean, or ad hoc committee, will consider the appeal and evidence and make one of the following decisions: the assigned grade should remain; the course instructor is asked to reconsider the grade in light of information collected and the reconsidered grade will stand; or a grade change is warranted. The decision will be communicated in writing within 30 days to the student and the instructor with copies of the formal response placed in the student's file and forwarded to the dean and any indicated grade changes filed with the registrar.

The student has the right to appeal the decision of the associate dean, or ad hoc committee, to the dean. This appeal must be submitted in writing no later than 14 days from the date of the formal response. The dean will review the procedural evidence, which now includes all the evidence previously gathered, the student's appeal letters and the formal response from the chair, associate dean, or ad hoc committee, and will render the final decision on the grade appeal. The decision will be communicated in writing within 30 days to the student and the instructor with copies of the formal response placed in the student's files and any indicated grade changes filed with the registrar.

## **Termination from the Program**

If a student does not meet criteria for progression the student will be required to withdraw or be terminated from the College of Nursing. A student who is asked to terminate from the program may submit a petition, in writing, to the Undergraduate Program and Curriculum Subcommittee on Progression requesting exemption from the stated policies or regulations of the program. The student is expected to identify the unique, unusual or uncontrollable circumstances which led to the petition and to formulate a plan to resolve issues. The petition is to be submitted within 10 days of notification of termination and before late registration. A student may petition the committee only once for a specific situation.

Once a decision has been made by the committee regarding the student's petition, a recommendation will be forwarded to the associate dean for undergraduate programs. The associate dean for undergraduate programs will make a decision based on the student's record and the committee's recommendation. The student will be notified of the associate dean's decision. If the student is dissatisfied with this decision, the final recourse within the College of Nursing is a petition to the dean.

## **Approval of Courses Taken Elsewhere**

Except under special circumstances, students are not allowed to take courses at another institution during a semester they are enrolled at Marquette University. In such circumstances, the approval of the associate dean for undergraduate programs must be obtained before the course begins.

Students desiring to take summer courses at colleges or universities other than Marquette and transfer such courses toward their degree requirements at Marquette must first secure approval from the associate dean or academic advising coordinator for undergraduate programs. The procedure and form may be obtained at the college office. Forms must be completed by the student and approved by the associate dean or academic advising coordinator prior to the student enrolling for courses. If prior approval is not obtained, there is no guarantee that credits earned will be accepted by Marquette University. Students must earn a grade of at least C in order for the course to be transferable. Transcripts with the school seal must be sent directly from the school in which the course(s) are taken to the Office of The Registrar after successfully completing the course. Normally, such transcripts should be received before the student enrolls for the next semester at Marquette. If a student takes approved course work at another institution at any time during their Marquette career, particularly in their final semester at Marquette, the final transcripts must be received by Marquette by the "last day to receive official transcripts", as listed on the academic calendar in order to graduate.

## Health, CPR, and Criminal Background Check Requirements

All pre-licensure students are required to complete a criminal background check and provide proof of physical exam and immunization status prior to entry into the program. Proof of CPR certification is required prior to fall, sophomore year. The criminal background check and TB immunization status are to be updated annually. CPR certification is updated every two years. These items must be submitted to [certifiedbackground.com](http://www.certifiedbackground.com) (<http://www.certifiedbackground.com/>) prior to June 1st to be processed and tracked. Students are responsible for the cost of these services. The approximate cost is \$73 for the first year, and \$40 for each subsequent year.

Certified Background will be requesting documentation on the following items:

### Physical Exam

The physical must be within six months of entry into the program. A physician, nurse practitioner, or a physician assistant must provide signed documentation of the physical exam. In addition, the provider must attest that the student is in satisfactory health to participate in Marquette University's College of Nursing Program, including engaging in clinical practice.

### Tetanus-Diphtheria Booster

Each student must have documentation of tetanus with the last 10 years.

### TB Skin Test

To be completed annually. Documentation must include the dates and results of the test. If test results are positive, provide the date of your chest x-ray and results. It is the students' responsibility to turn in documentation of this test to [certifiedbackground.com](http://www.certifiedbackground.com) on a yearly basis.

### Chickenpox Varicella Vaccine OR Positive Blood Titer

Provide documentation of Varicella disease or proof of immunity by titer, or 2 doses of Varicella vaccine, 4 weeks apart.

### 2 MMR (measles, mumps, rubella) Vaccines OR 2 Measles, 1 Mumps, 1 Rubella Vaccine

Dose 1 on or after the first birthday; Dose 2 must be at least one month after the 1st dose.

If immunization date is not available, a laboratory report of a blood test (titer) showing immunity to Rubella, Mumps and Rubella will be accepted. Vaccine/Titer not required for those born prior to 1957.

### Hepatitis B Virus (HBV/HBSAB Series) OR Titer

If titer documentation indicates no immunity you must be immunized and provide documentation of the 3-dose series.

**Note:** The preceding documentation is required by the College of Nursing and is to be submitted to [certifiedbackground.com](http://www.certifiedbackground.com). Any health information required by the University must be submitted separately to MU Student Health Services.

Students will not be permitted to progress in the program and/or continue in clinical practice if the above health reports are not current and on file at [certifiedbackground.com](http://certifiedbackground.com). If clinical time is missed due to missing health requirements, students' progression may be affected.

## CPR Certification

Provide a copy of your card. CPR certification must be maintained throughout the program. Only American Heart Association Health Care provider BLS certification, which includes AED, will be accepted. Certification at Marquette University is available.

**Note:** Pre-licensure students can complete the BLS certification prior to fall, sophomore year.

**Note:** Direct Entry students can complete the BLS certification at the beginning of their pre-licensure phase.

## Background Check

Required by the Wisconsin Caregiver Background Check Law. The Office of the General Counsel and the Wisconsin State Board of Nursing will be contacted in all instances of criminal offenses identified to determine if a student is eligible to remain in the program.

Wisconsin Professional Nursing License (Direct Entry and RN to BSN students only)

**Note:** Direct Entry students will be required to provide proof of licensure after passing the NCLEX-RN, but no later than the 2nd Friday in October after completion of the pre-licensure phase.

## Accrediting Commission

Verification of accreditation status may be obtained from The Commission on Collegiate Nursing Education; 1 DuPont Circle NW; Washington, DC 20036-1120; (202) 887-6791.

# Major in Nursing

Marquette offers six bachelor of science in nursing programs. Students may also choose to minor in an area of study (e.g., foreign language). Specialized program plans are developed for the minor in conjunction with the academic advising coordinator.

## Major Requirements

|                        |  |   |
|------------------------|--|---|
| NURS 1000              | Dimensions of Professional Nursing   | 3 |
| NURS 2000              | Health Assessment  | 3 |
| NURS 2075              | Foundations of Nursing Practice  | 3 |
| NURS 2100              | Pathophysiology 1  | 3 |
| NURS 3100              | Pathophysiology 2  | 3 |
| NURS 2110              | Pharmacotherapeutics for Nursing Practice                                    | 3 |
| NURS 3200              | Introduction to Nursing Research   | 3 |
| NURS 3300              | Nursing Care of Adults -- Theory   | 3 |
| NURS 3301              | Nursing Care of Adults -- Practicum  | 3 |
| NURS 3150              | Essentials of Gerontological Nursing   | 3 |
| NURS 3400              | Childbearing Family Nursing--Theory  | 3 |
| NURS 3401              | Childbearing Family Nursing--Practicum                                       | 3 |
| NURS 3500              | Mental Health Nursing--Theory  | 3 |
| NURS 3501              | Mental Health Nursing--Practicum   | 3 |
| NURS 4300              | Nursing Care of the Acutely Ill Adult--Theory                                | 3 |
| NURS 4301              | Nursing Care of the Acutely Ill Adult--Practicum                             | 3 |
| NURS 4400              | Family Centered Nursing of Children -- Theory                                | 3 |
| NURS 4401              | Family Centered Nursing of Children -- Practicum                             | 3 |
| NURS 4500              | Nursing of Communities -- Theory   | 3 |
| NURS 4501              | Nursing of Communities -- Practicum  | 3 |
| NURS 4601              | Synthesis Practicum  | 3 |
| NURS 4650              | Nursing Leadership   | 3 |
| any NURS/HEAL elective |  | 3 |
| HEAL 1025              | Culture and Health (satisfies both UCCS and college curriculum requirements) | 3 |

|                    |                                  |    |
|--------------------|----------------------------------|----|
| HEAL 2045          | Normal and Therapeutic Nutrition | 3  |
| Total Credit Hours |                                  | 75 |

## Prelicensure

### Bachelor of Science in Nursing: Prelicensure

An eight-term program leads to the degree of bachelor of science in nursing. The College of Nursing encourages applications from qualified students from all cultural, racial, religious and ethnic groups of either sex. The curriculum includes course requirements for the UCCS and the nursing major.

The college reserves the right to amend the program and courses offered from year to year.

| Freshman               |       |                           |       |
|------------------------|-------|---------------------------|-------|
| First Term             | Hours | Second Term               | Hours |
| NURS 1000 <sup>+</sup> | 3     | BISC 2070 <sup>+</sup>    | 3     |
| BISC 1060 <sup>+</sup> | 3     | BISC 1015 <sup>+</sup>    | 5     |
| ENGL 1001 <sup>+</sup> | 3     | ENGL 1002 <sup>+</sup>    | 3     |
| PSYC 1001 <sup>+</sup> | 3     | PHIL 1001 <sup>+</sup>    | 3     |
| THEO 1001 <sup>+</sup> | 3     | General elective          | 3     |
|                        | 15    |                           | 17    |
| Sophomore              |       |                           |       |
| First Term             | Hours | Second Term               | Hours |
| PSYC 2101 <sup>+</sup> | 3     | NURS 2075 <sup>+</sup>    | 3     |
| BISC 3115 <sup>+</sup> | 3     | NURS 2100 <sup>+</sup>    | 3     |
| HEAL 1025 <sup>+</sup> | 3     | SOCI 2200 <sup>+</sup>    | 3     |
| HEAL 2045 <sup>+</sup> | 3     | History UCCS <sup>+</sup> | 3     |
| NURS 2000 <sup>+</sup> | 3     |                           |       |
|                        | 15    |                           | 12    |
| Junior                 |       |                           |       |
| First Term             | Hours | Second Term               | Hours |
| NURS 3100 <sup>+</sup> | 3     | NURS 3400                 | 3     |
| NURS 3200              | 3     | NURS 3401                 | 3     |
| NURS 3300              | 3     | NURS 2110                 | 3     |
| NURS 3301              | 3     | NURS 3500                 | 3     |
| NURS 3150              | 3     | NURS 3501                 | 3     |

|   |              |                            |              |
|---|--------------|----------------------------|--------------|
| PHIL 2310 <sup>+</sup>                          | 3            | Math UCCS <sup>+</sup>     | 3            |
|   | 18           |                            | 18           |
| <b>Senior</b>                                   |              |                            |              |
| <b>First Term</b>                               | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |
| NURS 4400                                       | 3            | NURS 4300                  | 3            |
| NURS 4401                                       | 3            | NURS 4301                  | 3            |
| NURS 4500                                       | 3            | NURS 4601                  | 3            |
| NURS 4501                                       | 3            | NURS 4650                  | 3            |
| Nursing or Health elective                      | 3            | Theology UCCS <sup>+</sup> | 3            |
| Literature or Performing Arts UCCS <sup>+</sup> | 3            |                            |              |
|   | 18           |                            | 15           |
| Total credit hours: 128                         |              |                            |              |

\* Courses offered only in the semester indicated

+ UCCS Courses

During junior and senior year, first and second term courses could alternate based on students individualized program plan.



# Honors

## Honors Bachelor of Science in Nursing Curriculum

| Freshman                |       |                         |       |
|-------------------------|-------|-------------------------|-------|
| First Term              | Hours | Second Term             | Hours |
| NURS 1000 <sup>+</sup>  | 3     | BISC 2070 <sup>+</sup>  | 3     |
| BISC 1060 <sup>+</sup>  | 3     | BISC 1015 <sup>+</sup>  | 5     |
| ENGL 1001 <sup>++</sup> | 3     | ENGL 1302 <sup>++</sup> | 3     |
| PSYC 1001 <sup>+</sup>  | 3     | PHIL 1001 <sup>++</sup> | 3     |
| HIST 1001 <sup>++</sup> | 3     | THEO 1001 <sup>++</sup> | 3     |
| HOPR 1953               | 1     |                         |       |
|                         | 16    |                         | 17    |
| Sophomore               |       |                         |       |
| First Term              | Hours | Second Term             | Hours |
| NURS 2000 <sup>+</sup>  | 3     | NURS 2075 <sup>+</sup>  | 3     |
| HEAL 1025 <sup>+</sup>  | 3     | NURS 2100 <sup>+</sup>  | 3     |
| HEAL 2045 <sup>+</sup>  | 3     | NURS 2110               | 3     |
| BISC 3115 <sup>+</sup>  | 3     | SOCI 2200 <sup>+</sup>  | 3     |
| PSYC 2101 <sup>+</sup>  | 3     | HIST 1002 <sup>++</sup> | 3     |
| HOPR 2953               | 2     |                         |       |
|                         | 17    |                         | 15    |
| Junior                  |       |                         |       |
| First Term              | Hours | Second Term             | Hours |
| NURS 3100 <sup>+</sup>  | 3     | NURS 3400               | 3     |
| NURS 3200               | 3     | NURS 3401               | 3     |
| NURS 3300               | 3     | NURS 3500               | 3     |
| NURS 3301               | 3     | NURS 3501               | 3     |
| NURS 3150               | 3     | Math UCCS               | 3     |
| PHIL 2310 <sup>++</sup> | 3     | HOPR 3953 or 3955       | 3     |
|                         | 18    |                         | 18    |

| <b>Senior</b>              |              |                       |              |
|----------------------------|--------------|-----------------------|--------------|
| <b>First Term</b>          | <b>Hours</b> | <b>Second Term</b>    | <b>Hours</b> |
| NURS 4400                  | 3            | NURS 4300             | 3            |
| NURS 4401                  | 3            | NURS 4301             | 3            |
| NURS 4500                  | 3            | NURS 4601             | 3            |
| NURS 4501                  | 3            | NURS 4650             | 3            |
| Nursing or Health elective | 3            | Theology UCCS         | 3            |
|                            |              | Honors Program (HOPR) | 3            |
|                            | 15           |                       | 18           |
| Total credit hours: 134    |              |                       |              |

\* Courses offered only in semester indicated

\*\* Students must take Honors-level section

+ UCCS Courses

Students may take summer clinical courses only with associate dean's permission, enrollment limited.

# Reserve Officer Training Corps

## Bachelor of Science in Nursing: Air Force ROTC Curriculum

| Freshman               |       |                           |       |                      |
|------------------------|-------|---------------------------|-------|----------------------|
| First Term             | Hours | Second Term               | Hours |                      |
| NURS 1000 <sup>+</sup> | 3     | BISC 2070 <sup>+</sup>    | 3     |                      |
| BISC 1060 <sup>+</sup> | 3     | BISC 1015 <sup>++</sup>   | 5     |                      |
| ENGL 1001 <sup>+</sup> | 3     | ENGL 1002 <sup>+</sup>    | 3     |                      |
| PSYC 1001 <sup>+</sup> | 3     | PHIL 1001 <sup>+</sup>    | 3     |                      |
| THEO 1001 <sup>+</sup> | 3     | AFAS 1012 <sup>+</sup>    | 1     |                      |
| AFAS 1011 <sup>+</sup> | 1     | History UCCS <sup>+</sup> | 3     |                      |
| AFAS 1051              | 0     |                           |       |                      |
|                        | 16    |                           | 18    |                      |
| Sophomore              |       |                           |       |                      |
| First Term             | Hours | Second Term               | Hours |                      |
| NURS 2000 <sup>+</sup> | 3     | NURS 2075 <sup>+</sup>    | 3     |                      |
| HEAL 2045 <sup>+</sup> | 3     | NURS 2100 <sup>+</sup>    | 3     |                      |
| BISC 3115 <sup>+</sup> | 3     | NURS 2110 <sup>+</sup>    | 3     |                      |
| SOCI 2200 <sup>+</sup> | 3     | HEAL 1025 <sup>+</sup>    | 3     |                      |
| Math UCCS <sup>+</sup> | 3     | PSYC 2101 <sup>+</sup>    | 3     |                      |
| AFAS 2021 <sup>+</sup> | 1     | AFAS 2022 <sup>+</sup>    | 1     |                      |
|                        | 16    |                           | 16    |                      |
| Junior                 |       |                           |       |                      |
| First Term             | Hours | Second Term               | Hours | Summer Term<br>Hours |
| NURS 3100 <sup>+</sup> | 3     | NURS 3200                 | 3     | NURS 4601<br>3       |
| NURS 3400              | 3     | NURS 3300                 | 3     |                      |
| NURS 3401              | 3     | NURS 3301                 | 3     |                      |
| NURS 3500              | 3     | PHIL 2310 <sup>+</sup>    | 3     |                      |
| NURS 3501              | 3     | NURS 3150                 | 3     |                      |

|                            |              |   |              |   |
|----------------------------|--------------|---|--------------|---|
| AFAS 3131 <sup>+</sup>     | 3            | AFAS 3132 <sup>+</sup>                          | 3            |   |
|                            | 18           |   | 18           | 3 |
| <b>Senior</b>              |              |   |              |   |
| <b>First Term</b>          | <b>Hours</b> | <b>Second Term</b>                              | <b>Hours</b> |   |
| NURS 4300                  | 3            | NURS 4400                                       | 3            |   |
| NURS 4301                  | 3            | NURS 4401                                       | 3            |   |
| NURS 4650                  | 3            | NURS 4500                                       | 3            |   |
| NURS or Health elective    | 3            | NURS 4501                                       | 3            |   |
| Theology UCCS <sup>+</sup> | 3            | Literature or Performing Arts UCCS <sup>+</sup> | 3            |   |
| AFAS 4141 <sup>+</sup>     | 3            | AFAS 4142 <sup>+</sup>                          | 3            |   |
|                            | 18           |   | 18           |   |
| Total credit hours: 141    |              |   |              |   |

\* Courses offered only in the semester indicated

+ UCCS Courses

## Bachelor of Science in Nursing: Army ROTC Curriculum

|                        |              |                        |              |  |
|------------------------|--------------|------------------------|--------------|--|
| <b>Freshman</b>        |              |                        |              |  |
| <b>First Term</b>      | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |  |
| NURS 1000 <sup>+</sup> | 3            | BISC 2070 <sup>+</sup> | 3            |  |
| BISC 1060 <sup>+</sup> | 3            | BISC 1015 <sup>+</sup> | 5            |  |
| ENGL 1001 <sup>+</sup> | 3            | ENGL 1002 <sup>+</sup> | 3            |  |
| PSYC 1001 <sup>+</sup> | 3            | PHIL 1001 <sup>+</sup> | 3            |  |
| THEO 1001 <sup>+</sup> | 3            | Math UCCS <sup>+</sup> | 3            |  |
| MISL 1001 <sup>+</sup> | 1            | MISL 1002 <sup>+</sup> | 1            |  |
| MISL 1100              | 1            | MISL 1200              | 1            |  |
|                        | 17           |                        | 19           |  |
| <b>Sophomore</b>       |              |                        |              |  |
| <b>First Term</b>      | <b>Hours</b> | <b>Second Term</b>     | <b>Hours</b> |  |
| NURS 2000 <sup>+</sup> | 3            | NURS 2075 <sup>+</sup> | 3            |  |

|                                   |              |   |              |                                    |
|-----------------------------------|--------------|---|--------------|------------------------------------|
| HEAL 2045 <sup>+</sup>            | 3            | NURS 2100 <sup>+</sup>                          | 3            |                                    |
| BISC 3115 <sup>+</sup>            | 3            | NURS 2110 <sup>+</sup>                          | 3            |                                    |
| PSYC 2101 <sup>+</sup>            | 3            | HEAL 1025 <sup>+</sup>                          | 3            |                                    |
| MISL 1800 <sup>++</sup>           | 3            | SOCI 2200 <sup>+</sup>                          | 3            |                                    |
| MISL 2001 <sup>+</sup>            | 1            | MISL 2002 <sup>+</sup>                          | 1            |                                    |
| MISL 2100 <sup>+</sup>            | 2            | MISL 2200 <sup>+</sup>                          | 2            |                                    |
|                                   | 18           |   | 18           |                                    |
| <b>Junior</b>                     |              |   |              |                                    |
| <b>First Term</b>                 | <b>Hours</b> | <b>Second Term</b>                              | <b>Hours</b> | <b>Summer Term</b><br><b>Hours</b> |
| NURS 3100 <sup>+</sup>            | 3            | NURS 3200                                       | 3            | NURS 4601 3                        |
| NURS 3400                         | 3            | NURS 3300                                       | 3            |                                    |
| NURS 3401                         | 3            | NURS 3301                                       | 3            |                                    |
| NURS 3500                         | 3            | NURS 3150                                       | 3            |                                    |
| NURS 3501                         | 3            | PHIL 2310 <sup>+</sup>                          | 3            |                                    |
| MISL 3001 <sup>+</sup>            | 1            | MISL 3002 <sup>+</sup>                          | 1            |                                    |
| MISL 3100 <sup>+</sup>            | 2            | MISL 3200 <sup>+</sup>                          | 2            |                                    |
| MISL 3101 <sup>+</sup>            | 1            | MISL 3202 <sup>+</sup>                          | 1            |                                    |
|                                   | 19           |   | 19           | 3                                  |
| <b>Senior</b>                     |              |   |              |                                    |
| <b>First Term</b>                 | <b>Hours</b> | <b>Second Term</b>                              | <b>Hours</b> |                                    |
| NURS 4400                         | 3            | NURS 4300                                       | 3            |                                    |
| NURS 4401                         | 3            | NURS 4301                                       | 3            |                                    |
| NURS 4500                         | 3            | NURS 4650                                       | 3            |                                    |
| NURS 4501                         | 3            | Nursing or Health elective                      | 3            |                                    |
| UCCS (THEO) Theology <sup>+</sup> | 3            | Literature or Performing Arts UCCS <sup>+</sup> | 3            |                                    |
| MISL 4001 <sup>+</sup>            | 1            | MISL 4002 <sup>+</sup>                          | 1            |                                    |
| MISL 4100 <sup>+</sup>            | 2            | MISL 4200 <sup>+</sup>                          | 2            |                                    |

|                         |    |            |    |  |
|-------------------------|----|------------|----|--|
| MISL 4101*              | 0  | MISL 4202* | 0  |  |
|                         | 18 |            | 18 |  |
| Total credit hours: 149 |    |            |    |  |

\* Courses offered only in semester indicated

+ UCCS Courses

## Bachelor of Science in Nursing: Navy ROTC Curriculum

| Freshman                                  |       |             |       |  |
|---|-------|-------------|-------|--|
| First Term                                | Hours | Second Term | Hours |  |
| NURS 1000*                                | 3     | BISC 2070*  | 3     |  |
| BISC 1060*                                | 3     | BISC 1015*+ | 5     |  |
| ENGL 1001*                                | 3     | ENGL 1002*  | 3     |  |
| PSYC 1001*                                | 3     | PHIL 1001*  | 3     |  |
| THEO 1001*                                | 3     | NASC 1022*  | 3     |  |
| NASC 1001                                 | 0     |             |       |  |
| NASC 1009*                                | 2     |             |       |  |
|   | 17    |             | 17    |  |
| Sophomore                                 |       |             |       |  |
| First Term                                | Hours | Second Term | Hours |  |
| NURS 2000*                                | 3     | NURS 2075*  | 3     |  |
| HEAL 1025*                                | 3     | NURS 2100*  | 3     |  |
| HEAL 2045*                                | 3     | NURS 2110   | 3     |  |
| BISC 3115*                                | 3     | PSYC 2101*  | 3     |  |
| NASC 1185*                                | 3     | SOCI 2200*  | 3     |  |
| Naval Science Cultural Awareness Elective | 3     |             |       |  |
|   | 18    |             | 15    |  |

| <b>Junior</b>           |              |                            |              |                    |              |
|-------------------------|--------------|----------------------------|--------------|--------------------|--------------|
| <b>First Term</b>       | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> | <b>Summer Term</b> | <b>Hours</b> |
| NURS 3100 <sup>+</sup>  | 3            | NURS 3400                  | 3            | NURS 4601          | 3            |
| NURS 3200               | 3            | NURS 3401                  | 3            |                    |              |
| NURS 3300               | 3            | NURS 3500                  | 3            |                    |              |
| NURS 3301               | 3            | NURS 3501                  | 3            |                    |              |
| NURS 3150               | 3            | Math UCCS <sup>+</sup>     | 3            |                    |              |
| PHIL 2310 <sup>+</sup>  | 3            |                            |              |                    |              |
|                         | 18           |                            | 15           |                    | 3            |
| <b>Senior</b>           |              |                            |              |                    |              |
| <b>First Term</b>       | <b>Hours</b> | <b>Second Term</b>         | <b>Hours</b> |                    |              |
| NURS 4300               | 3            | NURS 4400                  | 3            |                    |              |
| NURS 4301               | 3            | NURS 4401                  | 3            |                    |              |
| NURS or HEAL elective   | 3            | NURS 4500                  | 3            |                    |              |
| UCCS (LPA) <sup>+</sup> | 3            | NURS 4501                  | 3            |                    |              |
| NURS 4650               | 3            | NASC 2186 <sup>+</sup>     | 3            |                    |              |
|                         |              | Theology UCCS <sup>+</sup> | 3            |                    |              |
|                         | 15           |                            | 18           |                    |              |
| Total credit hours: 136 |              |                            |              |                    |              |

\* Courses offered only in semester indicated

+ UCCS Courses

Fall and Spring courses offered during Junior and Senior year will depend on drill assignments, see adviser.

## Double Major in Psychology

### Bachelor of Science in Nursing with a Second Major in Psychology Curriculum

| Freshman                                     |       |  |       |             |       |
|--|-------|--|-------|-------------|-------|
| First Term                                   | Hours | Second Term                                  | Hours |             |       |
| NURS 1000 <sup>+</sup>                       | 3     | BISC 2070 <sup>+</sup>                       | 3     |             |       |
| BISC 1060 <sup>+</sup>                       | 3     | BISC 1015 <sup>++</sup>                      | 5     |             |       |
| ENGL 1001 <sup>+</sup>                       | 3     | ENGL 1002 <sup>+</sup>                       | 3     |             |       |
| PSYC 1001 <sup>+</sup> ***                   | 3     | PHIL 1001 <sup>+</sup>                       | 3     |             |       |
| THEO 1001 <sup>+</sup>                       | 3     | HEAL 1025 <sup>+</sup>                       | 3     |             |       |
|  | 15    |  | 17    |             |       |
| Sophomore                                    |       |  |       |             |       |
| First Term                                   | Hours | Second Term                                  | Hours |             |       |
| NURS 2000 <sup>+</sup>                       | 3     | NURS 2075 <sup>+</sup>                       | 3     |             |       |
| PSYC 2001 <sup>+</sup> ***                   | 4     | NURS 2100 <sup>+</sup>                       | 3     |             |       |
| PSYC 2101 <sup>+</sup> ***                   | 3     | NURS 2110                                    | 3     |             |       |
| HEAL 2045 <sup>+</sup>                       | 3     | PSYC 2050 <sup>++***</sup>                   | 4     |             |       |
| BISC 3115 <sup>+</sup>                       | 3     | SOCI 2200 <sup>+</sup>                       | 3     |             |       |
|  | 16    |  | 16    |             |       |
| Junior                                       |       |  |       |             |       |
| First Term                                   | Hours | Second Term                                  | Hours | Summer Term | Hours |
| NURS 3100 <sup>+</sup>                       | 3     | NURS 3300                                    | 3     | NURS 4400   | 3     |
| NURS 3400                                    | 3     | NURS 3301                                    | 3     | NURS 4401   | 3     |
| NURS 3401                                    | 3     | NURS 3150                                    | 3     |             |       |
| NURS 3500                                    | 3     | PSYC Elective <sup>***</sup>                 | 3     |             |       |
| NURS 3501                                    | 3     | PSYC Elective <sup>***</sup>                 | 3     |             |       |
| PSYC Required content<br>area <sup>***</sup> | 3     | PSYC Required content<br>area <sup>***</sup> | 3     |             |       |
|  | 18    |  | 18    |             | 6     |



| Senior                         |       |                                    |       |  |
|--------------------------------|-------|------------------------------------|-------|--|
| First Term                     | Hours | Second Term                        | Hours |  |
| NURS 4500                      | 3     | NURS 4300                          | 3     |  |
| NURS 4501                      | 3     | NURS 4301                          | 3     |  |
| Nursing or Health elective     | 3     | NURS 4601                          | 3     |  |
| PSYC Required content area *** | 3     | NURS 4650                          | 3     |  |
| PHIL 2310 <sup>+</sup>         | 3     | Literature or Performing Arts UCCS | 3     |  |
| History UCCS                   | 3     | Theology UCCS                      | 3     |  |
|                                | 18    |                                    | 18    |  |
| Total credit hours: 142        |       |                                    |       |  |

\* Courses offered only in semester indicated

\*\* PSYC 2050 satisfies the Nursing Research requirement (NURS 3200)

\*\*\* Psychology Major required course

+ UCCS Courses

**Note:** Students may take summer clinical courses only with associate dean's permission, enrollment limited

## Nursing and Psychology Major

For more details regarding the requirements for the psychology major available for the Nursing students, see the Psychology Department (p. 315) section of this bulletin.

## Minor in Health Studies

### Minor Requirements

Completion of the minor will be noted on a student's transcript if the following requirements are met:

The minor requires 18 credit hours. At least six credits must be selected from each of the following groups:

#### Group 1

|           |   |     |
|-----------|---|-----|
| HEAL 1025 | Culture and Health                      | 3   |
| HEAL 2045 | Normal and Therapeutic Nutrition        | 3   |
| HEAL 1200 | Women's Health                          | 3   |
| HEAL 1300 | Substance Abuse                         | 3   |
| HEAL 3150 | Alternative and Complementary Therapies | 3   |
| HEAL 1931 | Topics in Health Care                   | 2-3 |
| HEAL 6931 | Topics in Health Care                   | 1-4 |
| HEAL 6845 | Case Management                         | 3   |

#### Group 2

|              |  |   |
|--------------|--|---|
| HEAL 2100    | Primary Health Care Concepts                     | 3 |
| HEAL 3100    | International Health                             | 3 |
| SOCI 3500    | Culture, Health and Illness                      | 3 |
| CMST 4500    | Health Communication                             | 3 |
| or CMST 5500 | Health Communication                             |   |
| JOUR 4330    | Health, Science and Environmental Communication  | 3 |
| or JOUR 5330 | Health, Science, and Environmental Communication |   |
| CLLS 2060    | Public Health                                    | 3 |
| BISC 2150    | Social Justice Issues in Health Science          | 3 |

Students should indicate their intention to work toward a minor as early as possible in their academic studies. To do so, students must complete the course study card available from the College of Nursing, Clark Hall, (414) 288-3809.

**Note:** This minor is not open to Nursing students.

## Special Academic Programs

### **Master of Science Program for Non-Nursing Graduates**

The master's program for non-nursing graduates is designed for those individuals who hold baccalaureate degrees in fields other than nursing and who wish to become nurses. The program builds upon the student's broad educational preparation and provides an intense, accelerated and specialized nursing curriculum to meet the student's career goals. Students complete the nursing requirements and meet the BSN program objectives in an intense 15-month, pre-MSN phase and progress to graduate study. Students are then prepared in the MSN program for roles as health care systems leaders, clinical nurse leaders or advanced practice nurses in: adult, older adult, children or nurse-midwifery.

### **Admission Requirements**

For Admission Requirements, see the Graduate Bulletin, Master of Science in Nursing-Second Degree Direct Entry for Non-nurses (<http://www.marquette.edu/nursing/academicprograms-msn-direct.shtml>)

## Student Organizations

### College Organization and Professional Association

The Marquette University College of Nursing Student Nurses Association (MUSNA) functions as a liaison between the college and the Marquette University Student Government. It coordinates and promotes student activities within the college. The association also is the university chapter of the Wisconsin Student Nurses Association, a constituent organization of the National Student Nurses Association.

### Honor Society

Sigma Theta Tau, International is an international professional honor society with constituent chapters in collegiate schools of nursing. The Delta Gamma Chapter at the College of Nursing is open to students, faculty and community leaders. Candidates enrolled in the College of Nursing must have junior or senior standing and are selected on the basis of superior scholastic achievement, potential leadership qualities and desirable personal qualifications.

Faculty and registered nurses in the community are selected on the basis of special interest in Sigma Theta Tau, International and marked achievement in the field of nursing.

## Course Descriptions

### Health

**HEAL 1025. Culture and Health. 3 cr. hrs.**

Cultural perspective of concepts of health and illness including the relationship of health care behaviors and beliefs to culture and social structure. Foster an appreciation for human diversity related to culture and health.

**HEAL 1200. Women's Health. 3 cr. hrs.**

A self-care approach to health maintenance, the physical and psychosocial changes during the life cycle, and the health care system as these pertain to women in our society.

**HEAL 1300. Substance Abuse. 3 cr. hrs.**

A comprehensive overview of substance abuse throughout the life span. Addresses the physiological, psychological, sociological and spiritual perspectives.

**HEAL 1931. Topics in Health Care. 2-3 cr. hrs.**

Various topics in health care as identified in the Schedule of Classes.

**HEAL 2045. Normal and Therapeutic Nutrition. 3 cr. hrs.**

Nutritional aspects of health promotion. Therapeutic dietary needs of clients with various health status deviations. Prereq: Soph. stndg. and BISC 1060 and BISC 2070 and BISC 1015; not open for credit to students who have completed BISC 3110.

**HEAL 2100. Primary Health Care Concepts. 3 cr. hrs.**

Exploration of primary health care principles and models. Focus is on multidisciplinary approaches to the examination of interacting factors contributing to the health of populations. Prereq: Soph. stndg.

**HEAL 3100. International Health. 3 cr. hrs.**

Overview of international health goals, issues, problems and programs. Includes factors influencing health, comparisons of health indicators and health systems, and global health interventions. Prereq: Jr. stndg.

**HEAL 3150. Alternative and Complementary Therapies. 3 cr. hrs.**

Exploration of alternative approaches to health beyond usual therapies of Western medicine. Emphasis on body-mind-spirit interconnections and multicultural perspectives. Prereq: Jr. stndg.

**HEAL 4000. Epidemiology. 3 cr. hrs.**

Analysis of occurrence and patterns of disease in populations including prevention and control strategies.

**HEAL 4200. Natural Family Planning. 3 cr. hrs.**

Physiological, behavioral, and spiritual aspects important to teaching and using natural family planning. Prereq: Jr. stndg.

**HEAL 4201. Natural Family Planning Practicum. 3 cr. hrs.**

Practical application of theory and skills for teaching natural family planning. Prereq: Jr. stndg.

### Nursing

**NURS 1000. Dimensions of Professional Nursing. 3 cr. hrs.**

An introduction to the discipline of professional nursing with an emphasis on caring and therapeutic relationships. Prereq: NURS major.

**NURS 1931. Topics in Nursing. 2-3 cr. hrs.**

Various topics in nursing and health care as identified in the Schedule of Classes. Prereq: NURS major.

**NURS 2000. Health Assessment. 3 cr. hrs.**

Introduction to systematic data gathering, analysis and documentation of nursing assessment data with an emphasis on cultural and age-related diversity. Includes a lab component. Prereq: NURS major, BISC 1060, BISC 2070, and BISC 1015; may be taken concurrently with BISC 3115, HEAL 2045, and NURS 1000.

**NURS 2075. Foundations of Nursing Practice. 3 cr. hrs.**

Acquisition of foundational nursing concepts and skills supportive of holistic nursing care for clients and families. Includes 2 credits theory; 1 credit lab. Prereq: NURS major, BISC 1060, BISC 2070, and BISC 1015; may be taken concurrently with BISC 3115, HEAL 2045, NURS 1000.

**NURS 2100. Pathophysiology 1. 3 cr. hrs.**

A study of the pathogenesis of select disorders and related diagnostic and treatment modalities as a basis for nursing practice. Focuses on genetic, neoplastic, immunologic, hematologic, endocrine and mental health disorders across the life span. Includes a discussion of temperature regulation, inflammatory and tissue healing process, the stress response and cardiovascular shock. Prereq: NURS major, BISC 1060, BISC 2070, BISC 1015, NURS 2110, which may be taken concurrently, and PSYC 1001.

**NURS 2110. Pharmacotherapeutics for Nursing Practice. 3 cr. hrs.**

Basic principles of pharmacology and pharmacotherapeutics as applied to patients across the life span. Includes nursing implications for administration, patient teaching, and evaluation of safety and effectiveness. Prereq: BISC 2070 and BISC 1015.

**NURS 2173. Professional Issues in Nursing. 3 cr. hrs.**

The impact on professional nursing of external and internal forces including law, ethics, education, and nursing process. Prereq: NURS major; R.N. students only.

**NURS 2964. Individual Study and Practice. 1-3 cr. hr.**

Individual study and practice with a client or a selected group of clients. Arrangements for guidance of a preceptor must be made prior to registration. May be taken twice. Prereq: Cons. of instr. and enrolled in the College of Nursing.

**NURS 3100. Pathophysiology 2. 3 cr. hrs.**

A study of the pathogenesis of select diseases and common diagnostic and treatment modalities as a basis for nursing practice. Focuses on select cardiovascular, respiratory, renal, digestive, musculoskeletal and neurologic diseases across the life span. Prereq: NURS major, NURS 2100, and PSYC 2101.

**NURS 3150. Essentials of Gerontological Nursing. 3 cr. hrs.**

Emphasis is on factors influencing the health and functional ability of older adults. Normal physiological, social and psychosocial changes of aging are presented. Common problems that compromise health care discussed with an emphasis on health promotion, nursing assessment, and nursing management. BSN-Pre-licensure students entering prior to fall 2005 complete this course for two credits. Prereq: NURS major, NURS 2000, NURS 2075, NURS 2100, NURS 2110, and NURS 3100, which may be taken concurrently.

**NURS 3200. Introduction to Nursing Research. 3 cr. hrs.**

Overview of research in nursing and its application to nursing practice. Prereq: Jr. stdng. and NURS major.

**NURS 3300. Nursing Care of Adults -- Theory. 3 cr. hrs.**

Focus on critical thinking and clinical judgment with adults and older adults related to wellness and common chronic illnesses. Emphasis is on health promotion, health maintenance, and health restoration. Prereq: NURS major, HEAL 1025, HEAL 2045, NURS 2075, NURS 2100, NURS 2110 and NURS 3100 (which may be taken concurrently). Must be taken concurrently with NURS 3301.

**NURS 3301. Nursing Care of Adults -- Practicum. 3 cr. hrs.**

Application of clinical judgment with adults and older adults related to wellness and common chronic illnesses. Emphasis is on health promotion, health maintenance, and health restoration for persons from diverse contexts across health care delivery settings. Prereq: NURS major and NURS 3300, which must be taken concurrently.

**NURS 3400. Childbearing Family Nursing--Theory. 3 cr. hrs.**

Study of diverse families during childbearing period. Focus is on nursing process, health promotion, and families in transition and adaptation from pre-conception through post-partum. Prereq: HEAL 1025, HEAL 2045, NURS 2075, NURS 2100, NURS 2110, NURS 3100 (may be taken concurrently), SOCI 2200, and PSYC 2101; must be taken concurrently with NURS 3401.

**NURS 3401. Childbearing Family Nursing--Practicum. 3 cr. hrs.**

Guided experience in the care of diverse families from preconception through the post-partum period. Focus on the application of nursing process in assisting families to meet their unique developmental needs and to foster family health. Prereq: NURS major; must be taken concurrently with NURS 3400.

**NURS 3500. Mental Health Nursing--Theory. 3 cr. hrs.**

An introduction to concepts, principles, and processes of mental health nursing with a focus on human responses across the life span and the health care continuum. Prereq: NURS major, HEAL 1025, HEAL 2045, NURS 2075, NURS 2100, NURS 2110, NURS 3100 (may be taken concurrently), PSYC 2101, SOCI 2200; must be taken concurrently with NURS 3501.

**NURS 3501. Mental Health Nursing--Practicum. 3 cr. hrs.**

Clinical practice to promote the development of the professional role and the application of concepts, principles, and processes of mental health nursing. Emphasis on therapeutic nursing interventions in caring for individuals, families, and communities across varying health care delivery settings. Prereq: NURS major; must be taken concurrently with NURS 3500.

**NURS 4300. Nursing Care of the Acutely Ill Adult--Theory. 3 cr. hrs.**

Nursing care of adults and older adults experiencing acute and complex illness with alterations and multiple body systems. Focus is on critical thinking, collaboration with interdisciplinary health care professionals, restoration, and rehabilitation. Prereq: NURS Major, NURS 3200, NURS 3300, NURS 3301, NURS 3400, NURS 3401, NURS 3500, and NURS 3501; must be taken concurrently with NURS 4301.

**NURS 4301. Nursing Care of the Acutely Ill Adult--Practicum. 3 cr. hrs.**

Application of critical thinking with adults and older adults experiencing acute and complex illness. Emphasis is on restoration, rehabilitation, and coordination of health care in the acute care setting. Prereq: NURS major; must be taken concurrently with NURS 4300.

**NURS 4350. Critical Care Nursing. 3 cr. hrs.**

Integration of pathophysiologic concepts and psychosocial variables unique to caring for critically ill adults. Prereq: Sr. stdng. and NURS major; or R.N. student.

**NURS 4400. Family Centered Nursing of Children -- Theory. 3 cr. hrs.**

Family centered nursing of children and adolescents in diverse populations. Focus on health promotion, maintenance, acute and chronic health problems. BSN-Pre-licensure students entering prior to fall 2005 complete this course for two credits. BSN-Pre-licensure students entering fall 2005 or later complete this course for three credits. Prereq: Sr. stdng., NURS major, NURS 3300, NURS 3301, NURS 3400, NURS 3401, NURS 3500, and NURS 3501; must be taken concurrently with NURS 4401.

**NURS 4401. Family Centered Nursing of Children -- Practicum. 3 cr. hrs.**

Emphasis on application of theory and the planning and provision of care to healthy and ill children. Prereq: Sr. stdng. and NURS major; must be taken concurrently with NURS 4400.

**NURS 4500. Nursing of Communities -- Theory. 3 cr. hrs.**

Nursing and community health concepts are integrated to provide a theory base for aggregate level care. Emphasis is on planning with communities for provision of care which may include healthy, vulnerable and ill persons within the context of dynamic systems. BSN-Pre-licensure students entering prior to fall 2005 complete this course for two credits. BSN-Pre-licensure students entering fall 2005 or later complete this course for three credits. Prereq: Sr. stdng., NURS major, NURS 3300, NURS 3301, NURS 3400, NURS 3401, NURS 3500, and NURS 3501; must be taken concurrently with NURS 4501.

**NURS 4501. Nursing of Communities -- Practicum. 3 cr. hrs.**

Application of the nursing and community health concepts for aggregate level care. Emphasis is on planning with communities for provision of care which may include healthy, vulnerable and ill persons within the context of dynamic systems. Prereq: Sr. stdng. and NURS major; must be taken concurrently with NURS 4500.

**NURS 4601. Synthesis Practicum. 3 cr. hrs.**

Synthesis and application of clinical knowledge through intensive practicum in a selected setting. Development of entry level competence in nursing practice with an emphasis on skill in clinical decision making. Prereq: Sr. stdng., NURS major, NURS 3200, NURS 3300, NURS 3301, NURS 3400, NURS 3401, NURS 3500, and NURS 3501.

**NURS 4650. Nursing Leadership. 3 cr. hrs.**

Analysis of organizational, management and leadership theories. Focus on development of leadership roles in diverse environments. Includes political, social, cultural, economic, and technological influences on health care. Prereq: Sr. stdng., NURS major, NURS 3200, NURS 3300, NURS 3301, NURS 3400, NURS 3401, NURS 3500, and NURS 3501; must be taken concurrently with either NURS 4301, 4401, or 4501.

**NURS 4951. Marquette Led Travel and Study Abroad in Nursing:. 3 cr. hrs.**

Course taught in an international setting by Marquette professors and where students earn Marquette credit. Prereq: Cons. of dept. ch.

**NURS 4995. Independent Study in Nursing. 1-3 cr. hr.**

Intensive library search or a research project relative to a specific area of interest. Arrangements for faculty direction must be made prior to registration. May be taken twice. Prereq: Cons. of instr. and enrolled in the College of Nursing.





## College of Professional Studies

### From the Dean

College of Professional Studies website (<http://www.marquette.edu/cps/>)

Welcome!

The College of Professional Studies was founded in 1996 and offers programs designed to meet the needs of working professionals throughout southeastern Wisconsin and beyond. Students can pursue a bachelors' degree in Leadership and Organizations, Professional Communication, Criminology and Law Studies and Psychology. Courses are taught in a concentrated format one evening or weekend day per week for eight weeks. There are five eight week terms per year.

The college also offers masters degrees in Leadership Studies, Public Service and Dispute Resolution and masters certificates in Leadership Studies, Dispute Resolution and Law Enforcement Management and Leadership. Courses are taught in a hybrid format with online classes available for many of the masters' programs.

In addition, the college delivers the Future Milwaukee community leadership development program to professionals living and working in Southeastern Wisconsin.

The vision of the College of Professional Studies is "to create the conditions for the possibility of personal and community transformation." The core values of the college – ethical leadership, civic engagement, social responsibility – are embedded across the curricula and throughout all college programs.

Robert J. Deahl, Ph.D.  
Dean, College of Professional Studies

## Degrees Offered

Marquette University confers a bachelor of arts degree on those students who have satisfactorily completed the following majors: criminology and law studies, psychology and professional communication as well as a bachelor of science degree on those students who have satisfactorily completed requirements for the leadership and organizations major.

The College of Professional Studies offers programs leading to the master in dispute resolution (M.D.R.), the master in leadership studies (M.L.S.), the master of arts in public service (M.A.P.S.) and the graduate certificates in dispute resolution, law enforcement leadership and management and leadership studies. For information regarding these graduate programs, see the Graduate Bulletin.

## Academic Regulations

Students in the College of Professional Studies are expected to adhere to the academic requirements and regulations listed in the university section of this bulletin and should refer to the College of Professional Studies student handbook available in the college office or online at the College's Advising D2L site.

### Academic Performance/Censure

Students admitted to the College of Professional Studies are expected to meet the college's academic standards. Academic performance of students in the college will be monitored closely. Any student who does not maintain the academic standards of the college, progress steadily toward graduation or demonstrate adequate achievement will be required to withdraw from the college.

Academic progress of students will be reviewed each eight-week session, or as indicated by the college, by means of special conditions. Special conditions will be given in writing to the student at the time of admission, readmission or transfer to the college. Anytime during the student's attendance in the college when academic progress is in question, special conditions may be required of the student for continued enrollment. Failure to adhere to the terms of the special conditions will result in academic withdrawal.

### Academic Dishonesty

The College of Professional Studies complies with the policy on academic dishonesty found in the University section of this bulletin. Professionalism in the university setting encompasses the ethical responsibility of each student to complete his/her own course work. Any student who plagiarizes, cheats or falsifies work or takes part in such activities may fail the assignment, the course or be dismissed from Marquette University.

### Advisers

Each student admitted to the College of Professional Studies is assigned a professional adult student adviser with whom the student should make contact at least once every eight-week session. The adviser is a resource to assist the student in planning his/her specific program of study and to assist the student in clarifying and achieving specific educational goals. Note that it is the responsibility of the student to understand and complete requirements for graduation, specific to the program selected.

### Assignments to Instructors - Mailing, Faxing and e-mailing

Students may use the U.S. Postal Service, e-mail or facsimile to submit assignments to their instructors, only if the instructors agree to this arrangement prior to the submission of work. The student should be aware that, if the assignment is not received, measures taken to rectify the situation are at the discretion of the instructor, which may result in a failing grade or a final grade determined based on the missing assignment.

It is the student's responsibility to retain a copy of his/her assignment for his/her records. This will ensure that, if the copy is not received, an additional copy can be submitted in a timely manner, replacing the original.

Each student should call the receiver of the submitted assignment to verify it was received.

## Attendance

Student attendance in each class session is deemed necessary for the successful completion of the course. The College of Professional Studies acknowledges that individual circumstances may prevent a student from attending a particular class period. Whenever possible, an absence should be prearranged with the professor. The student is responsible for all materials covered and announcements made during his/her absence. It should be noted that the college does not differentiate between excused and unexcused absences.

Multiple absences may compromise the integrity of the learning experience. Therefore, students with two absences from an 8-week course and three absences from 12-week class may, at the recommendation of the instructor, be withdrawn from the course. The College of Professional Studies reserves the right to automatically withdraw any student who has three absences in an 8-week course and four absences in a 12-week course. In the event of a withdrawal from a course the grade of WA will appear on the official transcript. Note that degree progress and financial aid may be impacted.

Tardiness and leaving early from class affect student performance. The student's grade and/or standing in the class may be adjusted accordingly.

In order to administer this policy effectively, each instructor will take attendance at every face-to-face, online or hybrid class. The College of Professional Studies provides sign-in attendance sheets for each class, and it is the student's responsibility to sign in or they will be counted as absent.

The College of Professional Studies advising staff will contact new students during their first term of enrollment if the sign-in attendance sheets reflect an absence. The attendance policy will be explained, as well as ramifications of additional absences. After a student's first term of enrollment, the student will be responsible for full familiarity with the college's attendance policy and ALL ramifications of absences.

All students enrolled in courses offered by the College of Professional Studies are expected to adhere to the college's attendance policy. While attendance is mandatory in Professional Studies courses, all other aspects of the University Attendance Policy (p. 62) apply. For specific details of the application of the College of Professional Studies Attendance Policy, contact the college office.

## Background Checks, Drug Testing

Some degrees, majors and/or courses may require a student to submit to a criminal background check and/or drug testing. The results of those checks and/or tests may affect the student's eligibility to continue in that degree, major and/or course.

## CD and D Grades

Courses completed with a grade of CD or D generally do not count toward the total hour requirement for a major but do fulfill the subject matter requirement and do count toward the total hours required for graduation.

Credit is never given twice for the same course. Students who received a grade of CD or D in a course specific to their major may need to repeat the course. See Repeated Courses (p. 79) in the university section of this bulletin.

## Grade Appeals Procedure

A student in the College of Professional Studies may appeal a grade that he/she feels was assigned in error. The initiation of a grade appeal must be prior to the completion of the session immediately following the session in which the course grade appeal occurred. Further, the student may initiate the process only after all possibilities of resolution have been explored with the course instructor. If a satisfactory resolution is not agreed upon, or if the student still believes that the course grade is in error, the student must submit, in writing, to the associate dean a formal letter of appeal. The appeal letter should include, but is not limited to, the following:

1. Course name and number.
2. Term the course was taken and completed.
3. Grade Received.
4. Rationale for grade dispute.
5. Steps taken to resolve the grade dispute.

Consideration will be given to each appeal received by the associate dean prior to the end of the following term.

Further appeal may be made to the dean of the college, who will consider the grade appeal based on university and college procedures and has the right to assign the final grade for the course.

## Incomplete Grades

A student who does not complete course assignments, tests, quizzes, presentations, etc., prior to the end of the session may request and pre-arrange with the instructor an incomplete grade. If course work is not completed and submitted prior to the deadline, the grade will automatically be changed to a failing grade. Arrangements to extend the deadline must be made prior to the original deadline date and communicated to the associate dean by the instructor. Additional information regarding incomplete grades is available in the College of Professional Studies student handbook.

## Make-up Examinations

At various times during the academic year, circumstances may prevent a student from taking an examination at the regularly scheduled examination time. At the discretion of the instructor, the student may take the examination at an alternative pre-arranged time. This rescheduled test/quiz/exam must be arranged prior to the regularly scheduled test/quiz/exam. In most instances, it is expected that the examination is completed prior to the next class meeting. This makeup examination can be done during the review session time or at a time both the instructional assistant and the student can meet. If an instructional assistant is not available for this class then arrangements must be made with the college office. Refer to the College of Professional Studies Student Handbook for further information.

## Pre-Assignments

Prior to each eight-week session, students can find textbook lists and homework due at the first class meeting at the individual course D2L online sites. Students are expected to complete the assignments for the first class and come prepared to participate.

## Removal of Incomplete Grades

The dates to complete and submit all course work for a class that a student originally received an incomplete grade are listed in the University Academic Calendar. All students must complete all work and submit it by the deadline. Students, in consultation with the instructor, may pre-arrange a deadline other than that of the university. In such cases written notification will be provided confirming the deadline in which both, the instructor and student agreed upon. If course work is not submitted by the deadline, university or pre-arranged, the grade will automatically change to a failing grade. Students should contact the college office for proper procedures for incomplete grades.

## Financial Aid Information and Application Procedure

Marquette University's Office of Student Financial Aid and the College of Professional Studies staff encourage you to apply for financial aid.

By applying for aid, your eligibility for both federal and state grants and federal student loans is determined.

Applying for financial aid is an easy, three step process:

Students wishing to apply for financial aid should make note of the following steps involved:

1. Register for a PIN. Your Personal Identification Number or PIN will serve as your electronic signature on your FAFSA application. Apply for your PIN online at [pin.ed.gov](http://pin.ed.gov) (<http://www.pin.ed.gov/PINWebApp/pinindex.jsp>).
2. Complete your FAFSA. The Free Application for Federal Student Aid or FAFSA is available online at [fafsa.ed.gov](http://fafsa.ed.gov) (<http://www.fafsa.ed.gov/>).
3. Receive your aid notification. When you have submitted your FAFSA and been accepted into the university as a degree-seeking student, you will be notified via CheckMarq of the aid for which you qualify. Of the sources listed, you will have the opportunity to decline any type of aid you do not wish to receive.

If you have questions or do not have access to the online applications, contact the MU Central at (414) 288-4000 or MU Central (<http://www.marquette.edu/mucentral/financialaid/>). The FAFSA application is still available in a paper format, which we will send to you.

## Additional Resources

### Study Grants

The College of Professional Studies has study grants available for adult learners at Marquette. Grants are available for students who are in good academic standing with a cumulative quality point of 2.250 or better, degree seeking and have applied for financial aid.

Students applying for the study grants must have applied for financial aid by filing the FAFSA form, must demonstrate financial need and must be registered for courses in the session in which they are requesting the grant. Applications, deadline dates and additional eligibility information can be obtained by contacting the college office at (414) 288-3153.

## Admission Requirements

All students, freshman or transfer students (advanced standing), applying to the College of Professional Studies must submit a completed application, writing essay, official transcripts from a high school or institution granting GED and, if appropriate, official transcripts from all post secondary institutions. An applicant's entire academic performance will be evaluated in making an admissions decision.

If an applicant was enrolled or registered at another institution since graduating from high school, official transcripts from such schools must be sent to the College of Professional Studies. Generally a minimum average of 2.000 (on a 4.000 scale) in college work is needed for consideration.

Non-degree applicants to the College of Professional Studies should refer to the Admission and Readmission (p. 19) section of this bulletin.

## Acceleration Opportunities

Marquette recognizes that adults have knowledge from personal and professional experiences that enrich their college experience significantly. Academic advisers evaluate each student's background to design a personalized plan for completing the degree. Students have a variety of ways to apply credit toward their degree:

### College Level Examination Program (CLEP) Tests

Degree credits may be earned for certain college courses through the College Level Examination Program (CLEP). Individuals who have acquired relevant knowledge outside the college classroom are encouraged to take the appropriate CLEP test(s). A maximum of 30 credits earned through CLEP examinations may be applied to a Marquette degree. Credit is granted for approved subject examinations only. Students should consult the university Admission and Readmission (p. 19) section of this bulletin for a listing of approved exams.

### Marquette Credit by Examination

In recognition that students may possess mastery of the content of a particular course which they have not registered, they can petition the college office to establish a testing procedure whereby the student can demonstrate his/her knowledge. Refer to the university Academic Regulations (p. 66) section of this bulletin.

### Transfer Credits

The College of Professional Studies accepts credit from both two and four year educational institutional in accordance with the university Transfer Credit Policy (p. 18) . Credits will be accepted on the basis of their relevance to the requirements of the program and grade earned is a C or better. Only credits will transfer, not grades. Up to 63 credits may be accepted from accredited two-year community and technical colleges and up to 81 credits from accredited four-year colleges and universities. Once enrolled as a student in the College of Professional Studies prior approval is required for course work completed at other accredited institutions. Contact the college admissions/records coordinator with any questions or concerns regarding transfer credits.



# Graduation Requirements

## Amount and Quality of Work

In addition to graduation requirements listed in the university section of this bulletin, students in the College of Professional Studies must comply with the following graduation requirements:

1. Students must earn a minimum of 126 credit hours, including University Core of Common Studies (UCCS) requirements, college curriculum requirements, a minimum of 30 credit hours in a major, as defined by degree requirements offered through the college and an optional minor of at least 18 credit hours. (**Note:** Depending on the major/minor selected, credit hours required for graduation may be greater than 126.)
2. Students must earn a minimum of a 2.000 cumulative GPA in their Marquette work.
3. A minimum of 45 Marquette credits are required to earn a Marquette undergraduate degree.
4. A minimum of 36 credit hours of upper-division course work must be completed for a degree. Thirty-two of the 36 upper-division credits hours must be completed at Marquette University.
5. A minimum 15 credits in the major and at least 9 credits in the minor, if declared, normally must be completed at Marquette University.
6. A grade of C or higher normally must be earned in each of a student's major courses, as well as in the minor, if a minor is declared.
7. Students may present credits but not grade points from another institution toward graduation requirements.
8. It is the candidate's responsibility to meet all university academic, financial and administrative requirements and procedures as outlined in this bulletin.
9. The final 30 credits must be completed at Marquette University.
10. A student in the College of Professional Studies who is not enrolled in Marquette courses for a total of one academic year (either two consecutive terms, five consecutive modules or any combination of terms and modules which total one academic year) or longer, must meet the graduation requirements which apply at the time of readmission.

## Degree Requirements

The College of Professional Studies builds on the foundational educational experience provided by Marquette's Core of Common Studies. It does this through a college curriculum that amplifies and deepens the knowledge, skills and values imparted to students in the nine knowledge areas of the Common Core, and by offering students the opportunity to develop specialized knowledge and skills in a variety of undergraduate majors and minors. The College of Professional Studies thereby extends the student's Core of Common Studies experiences, and focuses further learning in pursuit of a specialized degree.

Working from the principles set forth in the Core of Common Studies the College of Professional Studies provides an educational environment — through advising, instruction, curriculum and assessment programs – for a diverse population of adult students marked by excellence, faith, leadership and service. Students enrolled in the College of Professional Studies will complete the requisite 36 credit hours in the nine knowledge areas plus an additional 21-27 credits as follows:

### University Common Core and College Curriculum requirements

| Knowledge Area                            | Common Core Credits | Additional College Credits |
|---|---------------------|----------------------------|
| Rhetoric (R)                              | 6                   | 0                          |
| Mathematical Reasoning (MR)               | 3                   | 3                          |
| Individual and Social Behavior (ISB)      | 3                   | 0                          |
| Diverse Cultures (DC)                     | 3                   | 0                          |
| Literature/Performing Arts (LPA)          | 3                   | 3                          |
| Histories of Cultures and Societies (HCS) | 3                   | 3                          |
| Science and Nature (SN)                   | 3                   | 0                          |
| Human Nature and Ethics (HNE)             | 6                   | 0                          |
| Theology (T)                              | 6                   | 0                          |
| Total                                     | 36                  | 9                          |

#### Additional courses required for the College Curriculum

|                    |                               |   |
|--------------------|-------------------------------|---|
| PRST 2110          | Principles of Liberal Studies | 3 |
| LEOR 3160          | Systems Thinking              | 3 |
| Total Credit Hours |                               | 6 |

#### Optional Skills course may be required for the College Curriculum

|                    |   |   |
|--------------------|---|---|
| PRST 1001          | Foundations of Learning                     | 3 |
| PRST 1005          | Fundamentals of College Reading and Writing | 3 |
| Total Credit Hours |   | 6 |

### Credit hours by Requirement Area

| Area                        | Credit Hours |
|-----------------------------|--------------|
| UCCS and College Curriculum | 57-60        |
| Major                       | 30-35        |
| Minor (Optional)            | 18-21        |
| Elective Credits            | 10-42        |

**Additionally, each student within the College of Professional Studies must complete course work in specific discipline areas. These areas include:**

#### Foundations of Learning (3 credit hours)

For increased success some new students may be required to complete PRST 1001 Foundations of Learning. This course is considered an elective.

#### Fundamentals of College Reading and Writing (3 credit hours)

For increased success some new students may be required to complete PRST 1005 Fundamentals of College Reading and Writing. This course is considered an elective.

#### Principles of Liberal Studies (3 credit hours)

All students are required to complete PRST 2110 Principles of Liberal Studies during their first two years at Marquette University. See course description for further information.

#### Systems Thinking (3 credit hours)

All students are required to complete LEOR 3160 Systems Thinking as part of the college curriculum.

#### English/Composition/Communication (9 credit hours)

All students must complete six credit hours of English composition as well as three credit hours of communications-based courses for a total of 9 credit hours. The specific courses that all College of Professional Studies students need to complete this requirement are:

|                    |   |   |
|--------------------|---|---|
| ENGL 1001          | Rhetoric and Composition 1              | 3 |
| ENGL 1002          | Rhetoric and Composition 2              | 3 |
| CMST 3210          | Business and Professional Presentations | 3 |
| Total Credit Hours |   | 9 |

#### History (6 credit hours)

All students are required to complete six credit hours of history. Generally students in the College of Professional Studies complete their history requirement with:

|                    |   |   |
|--------------------|---|---|
| HIST 1001          | Growth of Western Civilization to 1715    | 3 |
| HIST 1002          | Growth of Western Civilization since 1715 | 3 |
| Total Credit Hours |   | 6 |

**Literature (6 credit hours)**

All students are required to complete six credit hours of literature. Generally students in the College of Professional Studies complete their literature requirement with:

|                    |                                       |   |
|--------------------|---------------------------------------|---|
| ENGL 2410          | Introduction to British Literature 1  | 3 |
| ENGL 2510          | Introduction to American Literature 1 | 3 |
| Total Credit Hours |                                       | 6 |

**Mathematics (6 credit hours)**

All students must complete six credit hours of mathematics, of which three credit hours must be PRST 2140 Research and Statistical Methods. The remaining 3 credit hours are selected from the courses listed below and depend upon the student's individual needs. **Note:** Students enrolled in the psychology major must enroll in PSYC 2001 Psychological Measurements and Statistics to fulfill the mathematical reasoning requirement.

|                                     |                                    |   |
|-------------------------------------|------------------------------------|---|
| PRST 2140                           | Research and Statistical Methods   | 3 |
| Choose one of the following courses |                                    | 3 |
| MATH 1100                           | College Algebra (*)                |   |
| PRST 1140                           | Foundations of Applied Mathematics |   |
| Total Credit Hours                  |                                    | 6 |

**Natural Science (3 credit hours)**

All students must complete PRST 1120 Aspects of Modern Science\* for three credit hours. Additional and/or different natural science courses may be approved by the college.

**Philosophy (6 credit hours)**

All student must complete PHIL 1001 Philosophy of Human Nature\* and one upper division course, PHIL 2310 Theory of Ethics\*, for a total of six credit hours.

**Social-Behavioral Sciences (9 credit hours)**

All students must complete nine credit hours of social-behavioral science, of which six credit hours must be PSYC 1001 General Psychology\* and LEOR 2220 Economic Theory and Practice. Students may choose one of the following four courses for the remaining three credit hours. Other social science courses may also fulfill the remaining 3 credit hours; however, those options are not offered through the eight-week format in the College of Professional Studies.

|                                     |                              |   |
|-------------------------------------|------------------------------|---|
| PSYC 1001                           | General Psychology           | 3 |
| LEOR 2220                           | Economic Theory and Practice | 3 |
| Choose one of the following courses |                              | 3 |

|           |                                 |
|-----------|---------------------------------|
| SOCI 1001 | Principles of Sociology (*)     |
| ANTH 1001 | Introductory Anthropology (*)   |
| CRLS 1001 | Introduction to Criminology (*) |
| POSC 2201 | American Politics (*)           |

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Total Credit Hours

9

**Theology (6 credit hours)**

All students must complete THEO 1001 Introduction to Theology\* and one second level UCCS approved theology course for a total of six credit hours. THEO 2400 Christian Discipleship\* is suggested as second level theology selection.

\* Courses fulfill University Core of Common Studies as well as college curriculum.

Consult the Core of Common Studies website (<http://www.marquette.edu/programs/core>) for additional and updated information on the University Core of Common Studies.

## Major and Minor Requirements

### Major and Minor Requirements

All students in the College of Professional Studies must complete a major to fulfill graduation requirements. It is required that students declare a major and minor (optional) prior to the end of their sophomore year or the completion of 60 credit hours. Students failing to do so jeopardize completing core requirements in a timely fashion. A minor is not required but is available in most disciplines offered through the College of Professional Studies. Credit hours required for the various minors are indicated in the sections that follow.

The College of Professional Studies offers majors in the following areas: criminology and law studies, leadership and organizations, professional communication and psychology as well as minors in criminology and law studies, leadership and organizations, professional communication, psychology, interdisciplinary fields and the professional minor. For interdisciplinary field minors contact the college for current information.

Course descriptions for criminology and law studies, professional communications and psychology are listed in the respective areas of this bulletin. Course descriptions for leadership and organizations, the professional minor and PRST designated course work will follow this section.

Should schedules permit, students may enroll in traditional day and/or evening classes. Consult the online Snapshot of the Schedule Classes (<http://www.marquette.edu/mucentral/registrar/snapshot/>) or see your academic adviser.

# Criminology and Law Studies

## Major in Criminology and Law Studies

Requires 30 credit hours, 10 courses in CRLS including:

### Required courses

|   |  |    |
|---|--|----|
| CRLS 1001                                   | Introduction to Criminology                | 3  |
| CRLS 2100                                   | Juvenile Delinquency and Juvenile Justice  | 3  |
| CRLS 2500                                   | Criminal Court Process                     | 3  |
| CRLS 3100                                   | Corrections: Prisons, Probation and Parole | 3  |
| CRLS 3300                                   | Police and Society                         | 3  |
| or CRLS 3350                                | Police Organization and Administration     |    |
| CRLS 4400                                   | Criminal Law and Procedure                 | 3  |
| CRLS 4640                                   | Family Violence and Public Intervention    | 3  |
| Choose three of the following four courses: |  | 9  |
| CRLS 4660                                   | Criminal Violence in America               |    |
| CRLS 4130                                   | Women, Crime, and Criminal Justice         |    |
| CRLS 4700                                   | Ethics in Criminal Justice                 |    |
| CRLS 4931                                   | Topics in Criminology and Law              |    |
| Total Credit Hours                          |  | 30 |

## Minor in Criminology and Law Studies

Requires 18 credit hours, six courses in CRLS including:

### Required Courses:

|  |                             |    |
|--|-----------------------------|----|
| CRLS 1001  | Introduction to Criminology | 3  |
| Choose 5 courses or 15 credit hours of CRLS courses. |                             | 15 |
| Total Credit Hours                                   |                             | 18 |

Courses listed above are offered in the 8-week accelerated format. However, the comprehensive CRLS course listing that follows includes semester courses as well as 8-week courses.

# Leadership and Organization

## Major in Leadership and Organization

Requires 33 credit hours. All students must complete the core leadership courses along with one concentration. The concentrations include: Organizational Development and Public Service.

### Core Leadership Courses: Twenty-one hours of core leadership courses consisting of:

|                    |   |    |
|--------------------|---|----|
| LEOR 2050          | Leading Teams and Groups                  | 3  |
| LEOR 2100          | History and Theories of Leadership        | 3  |
| LEOR 3140          | Ethics in Leadership                      | 3  |
| LEOR 3150          | Leadership and Diversity in Organizations | 3  |
| LEOR 3610          | Leaders as Communicators                  | 3  |
| LEOR 4997          | Integrating Seminar                       | 3  |
| PRST 3110          | Research and Inquiry Methods              | 3  |
| Total Credit Hours |   | 21 |

### Concentrations:

#### Organizational Development:

|                                  |                                     |    |
|----------------------------------|-------------------------------------|----|
| LEOR 3320                        | Organizational Processes            | 3  |
| LEOR 3340                        | Organization Development and Change | 3  |
| LEOR 3350                        | Organizational Behavior             | 3  |
| One upper division LEOR elective |                                     | 3  |
| Total Credit Hours               |                                     | 12 |

#### Public Service:

|                    |   |    |
|--------------------|---|----|
| LEOR 3410          | Political Leadership                        | 3  |
| LEOR 3440          | Leaders as Agents of Change                 | 3  |
| LEOR 3520          | Nonprofit Leadership                        | 3  |
| LEOR 3540          | Leadership in Community-based Organizations | 3  |
| Total Credit Hours |   | 12 |



## Minor in Leadership and Organization

Requires 21 credit hours. All students must complete the 12 credit hours of required courses along with 9 credit hours of upper-division LEOR course work.

|   |   |    |
|---|---|----|
| LEOR 2050   | Leading Teams and Groups                  | 3  |
| LEOR 2100   | History and Theories of Leadership        | 3  |
| LEOR 3140   | Ethics in Leadership                      | 3  |
| LEOR 3150   | Leadership and Diversity in Organizations | 3  |
| Nine credit hours of upper-division LEOR course work. |   | 9  |
| Total Credit Hours                                    |   | 21 |

## Professional Communication

### Major in Professional Communication

Requires 30 credit hours, including:

|  |   |    |
|--|---|----|
| CMST 1000  | Introduction to Communication             | 3  |
| CMST 2000  | Introduction to Small Group Communication | 3  |
| CMST 2100  | Interpersonal Communication               | 3  |
| CMST 2310  | Argument in Contemporary Society          | 3  |
| CMST 3300  | Persuasion                                | 3  |
| Choose five of these six CMST/ADPR/COMM courses: |   | 15 |
| CMST 3100  | Communication and Conflict                |    |
| CMST 3200  | Organizational Communication              |    |
| CMST 3310  | Ethics in Human Communication             |    |
| CMST 3410  | Intercultural Communication               |    |
| ADPR 2200  | Media Writing                             |    |
| COMM 4400  | Mass Communication Theory and Research    |    |
| Total Credit Hours                               |   | 30 |

### Minor in Professional Communication

Requires 21 credit hours, including:

|   |   |    |
|---|---|----|
| CMST 1000   | Introduction to Communication             | 3  |
| CMST 2000   | Introduction to Small Group Communication | 3  |
| CMST 2100   | Interpersonal Communication               | 3  |
| CMST 3100   | Communication and Conflict                | 3  |
| CMST 3300   | Persuasion                                | 3  |
| 2 courses totaling 6 credit hours of CMST electives |   | 6  |
| Total Credit Hours                                  |   | 21 |

Courses other than the communication studies courses listed maybe completed to fulfill elective credit hour requirements. Such options are generally not offered in the 8-week format. Consult an adult student adviser.

Courses listed above are offered in the 8-week accelerated format. However, the comprehensive CMST course listing that follows includes semester courses as well as 8-week courses.

## Professional Minor

### Requirements for Professional Minor

Requires 21 credit hours, seven courses in leadership and organization:

|                    |  |    |
|--------------------|--|----|
| LEOR 2210          | Accounting Principles and Applications | 3  |
| LEOR 2220          | Economic Theory and Practice           | 3  |
| LEOR 2240          | Principles of Financial Management     | 3  |
| LEOR 2280          | Marketing Concepts and E-commerce      | 3  |
| LEOR 3165          | Leading Continuous Quality Improvement | 3  |
| LEOR 3175          | Principles of Human Resource           | 3  |
| LEOR 3710          | Information Systems for Management     | 3  |
| Total Credit Hours |  | 21 |

# Psychology

## Major in Psychology

Requires 35 credit hours including:

Required Courses:

|           |                    |   |
|-----------|--------------------|---|
| PSYC 1001 | General Psychology | 3 |
|-----------|--------------------|---|

|           |   |   |
|-----------|---|---|
| PSYC 2001 | Psychological Measurements and Statistics | 4 |
|-----------|---|---|

|           |  |   |
|-----------|--|---|
| PSYC 2050 | Research Methods and Designs in Psychology | 4 |
|-----------|--|---|

|  |    |
|--|----|
| Content Areas: Choose at least one course from at least five of the following eight content areas: | 15 |
|--|----|

Developmental:

|           |  |
|-----------|--|
| PSYC 3101 | Developmental Psychology: Conception Through Adolescence |
|-----------|--|

|           |   |
|-----------|---|
| PSYC 3120 | Developmental Psychology: Adulthood and Aging |
|-----------|---|

Social:

|           |                                |
|-----------|--------------------------------|
| PSYC 3201 | Introductory Social Psychology |
|-----------|--------------------------------|

Learning:

|           |                       |
|-----------|-----------------------|
| PSYC 3301 | Learning and Behavior |
|-----------|-----------------------|

Assessment:

|           |                                     |
|-----------|-------------------------------------|
| PSYC 3701 | Principles of Psychological Testing |
|-----------|-------------------------------------|

History and Systems:

|           |                                   |
|-----------|-----------------------------------|
| PSYC 4801 | History and Systems of Psychology |
|-----------|-----------------------------------|

Personality Theories:

|           |                         |
|-----------|-------------------------|
| PSYC 3501 | Theories of Personality |
|-----------|-------------------------|

Physiological:

|           |               |
|-----------|---------------|
| PSYC 3601 | Biopsychology |
|-----------|---------------|

Abnormal:

|           |                     |
|-----------|---------------------|
| PSYC 3401 | Abnormal Psychology |
|-----------|---------------------|

|  |   |
|--|---|
| Elective Courses - Choose three additional PSYC courses from those not used above: | 9 |
|--|---|

---

|                    |    |
|--------------------|----|
| Total Credit Hours | 35 |
|--------------------|----|

## Minor in Psychology

Requires 18 credit hours, six courses in psychology:

|                              |                    |    |
|------------------------------|--------------------|----|
| PSYC 1001                    | General Psychology | 3  |
| Five additional PSYC courses |                    | 15 |
| Total Credit Hours           |                    | 18 |

Courses other than the psychology courses listed above may be completed to fulfill credit hour requirements. Such options are generally not offered in the 8-week format. Consult an adult student adviser.

Courses listed above are offered in the 8-week accelerated format. However, the comprehensive PSYC course listing that follows includes semester courses as well as 8-week courses.

## Special Academic Programs

### **Harley-Davidson Motor Company**

In 1995, the College of Professional Studies joined with Harley-Davidson Motor Company in developing an on-site undergraduate degree program. Qualified students who are Harley-Davidson employees are eligible to attend Marquette classes held at Harley-Davidson. Further information regarding participating in this program can be obtained by calling the Harley-Davidson academic adviser located on Marquette's campus in the 707 Building, 707 N. 11th St., Suite 403 or call (414) 288-3153.

## Course Descriptions

### **LEOR 1260. Personal and Family Financial Planning. 3 cr. hrs.**

Focuses on the financial planning needs of individuals, families and working professionals. Specific emphasis is given to contemporary issues facing individuals and households by providing a general overview across a broad range of topics. These topics include family budgeting, personal investing, consumer purchasing, credit, home purchasing/mortgages, employee benefit selection and estate planning. Students will also develop detailed individual and family financial plans. Prereq: Enrolled in Professional Studies.

### **LEOR 2050. Leading Teams and Groups. 3 cr. hrs.**

Team building and group theory, concepts, research and principles and applications; understanding how teams and groups function; development of skills needed to lead and work effectively in teams and groups; exercises, simulations, experiential learning. Prereq: Enrolled in Professional Studies or BUMD-Minor.

### **LEOR 2100. History and Theories of Leadership. 3 cr. hrs.**

Analysis of the historical concepts and contemporary theories of leadership; emphasis on the application of leadership concepts to actual leadership situations. Prereq: Enrolled in Professional Studies or BUMD-Minor.

### **LEOR 2210. Accounting Principles and Applications. 3 cr. hrs.**

Measurement of income/expenses and the valuation of assets and equities under various kinds of organizations; structuring data to aid management decisions. Prereq: Enrolled in Professional Studies or BUMD-Minor, and MATH 1100 or equiv.

### **LEOR 2220. Economic Theory and Practice. 3 cr. hrs.**

The Economic way of thinking (principles, analytic concepts and techniques) applied to consumer choice, resource use and the organization's pricing/hiring/production decisions; the operation of markets and the economic role of government; determinants of aggregate production, employment and the pricing level. Prereq: Enrolled in Professional Studies or BUMD-Minor, and MATH 1100 or equiv.

### **LEOR 2240. Principles of Financial Management. 3 cr. hrs.**

Acquisition and utilization of funds to support the production, personnel and marketing functions; theory of finance in relation to planning, control, risk and optimum capital structure. Prereq: Enrolled in Professional Studies or BUMD-Minor, and MATH 1100 or PRST 1140 or equiv.

### **LEOR 2280. Marketing Concepts and E-commerce. 3 cr. hrs.**

Examines the role of marketing from both a business strategy and societal perspective. Students will examine the strategic, decision-making aspects of marketing including demand creation, consumer behavior, product management, pricing strategies, e-commerce, and advertising. The course will emphasize contemporary marketing cases and students will participate in practical projects to reinforce demand creation theory. The program will also examine the societal aspects of marketing including the effects of advertising on shaping cultural attitudes, social mores, and public opinion. Prereq: Enrolled in Professional Studies or BUMD-Minor.

### **LEOR 3045. Interpersonal Conflict Management. 3 cr. hrs.**

The theories and principles of interpersonal conflict will be explored. Emphasis on effective application of conflict management techniques, negotiation and resolution strategies in the workplace. Prereq: Enrolled in Professional Studies.



**LEOR 3125. Issues in Organizational Leadership 1. 3 cr. hrs.**

The study of selected topics and applications including ethics and leadership, leading individuals, decision making and problem solving, leadership in formal organizations, leader as change agent, leadership and motivation, policy and leadership, entrepreneurial leadership and leadership in non-Western cultures. Prereq: Enrolled in Professional Studies and LEOR 2100.

**LEOR 3135. Issues in Organizational Leadership 2. 3 cr. hrs.**

Prereq: Enrolled in Professional Studies and ORLE 2100.

**LEOR 3140. Ethics in Leadership. 3 cr. hrs.**

A foundation course in which the student examines, determines, and applies the essential leadership dimension of ethical thought and behavior. Literature, presentations, projects, and discussion will include contemporary and classical thinking and trace its evolution over time and circumstances. Consideration will be given to Greek and Roman periods, the role of religious thought, the humanism of the Renaissance, the Age of Enlightenment, and the Industrial Revolution. The outcomes of these eras in western civilization will be compared to those of other cultures and regions with attention to the impact on related societies. Students will experience the often complex and competing demands and interests of different cultures and societal groups and will develop a personal sense of principles which have universal application along with areas of reasonable compromise in achieving ethical outcomes. Other world intercultural perspectives will be explored including: political, legal, theological, environmental, educational, and tradition-based institutions. Practical ethical issues and problems related to cultural diversity, international business environments and influences will be explored. As a concluding exercise, students will develop a paper on their personal philosophy concerning ethical leadership principles and practices to which they are willing to commit in their professional and personal lives. Prereq: Enrolled in Professional Studies and LEOR 2100.

**LEOR 3150. Leadership and Diversity in Organizations. 3 cr. hrs.**

Examination of interpersonal patterns of selected ethnic groups, races and social classes in the U.S.; gender differences and considerations; exploration of cultural diversity in the workplace: understanding appropriate behaviors; managing diversity in achieving the goal of the organization. Prereq: Enrolled in Professional Studies; LEOR 2050 recommended.

**LEOR 3155. Social Psychological Principles Applied to Leadership. 3 cr. hrs.**

Basic social psychology theory and principles, such as attribution theory, persuasion and attitude change, group behavior applied to leadership. This applications-based social psychology course will specifically encompass organizational leadership. Prereq: Enrolled in Professional Studies; PSYC 1001.

**LEOR 3160. Systems Thinking. 3 cr. hrs.**

The interconnections of infinitely complex networks of systems in organizational life will be explored. Basic concepts and principles of systems thinking will be explored. Application of such tools as behavior-over-time-graphs and causal loops will be a focus, as will strategies to see how various kinds of power flow through a system. Complex systems will be studied. Prereq: Enrolled in Professional Studies.

**LEOR 3165. Leading Continuous Quality Improvement. 3 cr. hrs.**

In-depth review of Continuous Quality Improvement (CQI) philosophies and guiding principles set the framework for this course. Interactive, hands-on learning of tools and techniques utilized in a CQI environment will occur. Case studies highlight systems and structures employed in multiple organizations. Prereq: Enrolled in Professional Studies; suggest PRST 2140 or equiv.

**LEOR 3175. Principles of Human Resource. 3 cr. hrs.**

Examines the principles, methods and practical applications of human resource management. Issues concerning the effective, equitable, ethical and legal treatment of employees will be reviewed related to attracting, selecting, developing, retaining, evaluating and utilizing human resources. Prereq: Enrolled in Professional Studies or BUMD-Minor.

**LEOR 3210. Global Commerce. 3 cr. hrs.**

Equip students with an analytical perspective on the most recent issues in contemporary global commerce. The content will focus on those forces currently having a profound impact, and imposing unique leadership challenges, on either corporate societal responsibility, the business operating environment, economic and regulatory systems, leadership, or financial climates. Course work will examine from three to six global topics per term. The emphasis of the course will be on developing and examining management interventions and leadership solutions. Therefore, students will be required to both assess topical issues and propose solutions to those contemporary commercial challenges. Students will be expected to work in collaborative teams and in an environment of spirited, constructive debate. Prereq: Enrolled in the College of Professional Studies; Complete 2 of the following: LEOR 1260, LEOR 2220, LEOR 2240, LEOR 2280.

**LEOR 3320. Organizational Processes. 3 cr. hrs.**

Analyzes the major organizational processes and the role that managers play in changing those processes to increase organizational effectiveness. Course material presents the concepts of leadership, teamwork and communication within an organizational setting and requires students to design an organizational structure that effectively considers the environment, technology, goals, profile and stage of growth of the organization. Prereq: Enrolled in Professional Studies or BUMD-Minor; Jr. stndg.; LEOR 2050.

**LEOR 3330. Consultation Theory and Practice. 3 cr. hrs.**

Covers conceptual knowledge of various models to increase organizational effectiveness, techniques used in consulting practices and opportunities to develop necessary skills. Students will develop and integrate theoretical and practical perspectives, approaches, and skills as a consultant. The process, affective, and collaborative dimensions of consulting, and client-consultant relationship are examined. Relationship management through the stages of the consulting process will be investigated. Dimensions such as capacities of the consultant, needs of the client organization relationships between the client and consultant and how to manage the relations will be explored. Prereq: Enrolled in the College of Professional Studies; LEOR 3340.

**LEOR 3340. Organization Development and Change. 3 cr. hrs.**

Reviews the broad background of organizational development (OD) and examines the assumptions, strategies, models, intervention techniques and other aspects of organizational development. The fundamental theories that underlie planned change are examined. The process of planned changes is then studied through a look at how OD practitioners enter and contract with client systems to diagnose organizations, groups and jobs; collect, analyze and feed back diagnostic data; design interventions; manage change; and evaluate and institutionalize change. Major OD methods - human process, techno-structural, human resource management and strategic interventions are deliberated. Students learn through case studies how different OD techniques or interventions are used by actual organizations. Prereq: Enrolled in Professional Studies; Jr. stndg.; LEOR 3350.

**LEOR 3350. Organizational Behavior. 3 cr. hrs.**

The behavior of people as individuals and in groups with emphasis on supervision, productivity and the organizational environment; the fundamentals of organizational theory, structure and administration. Prereq: Enrolled in Professional Studies or BUMD-Minor; LEOR 3320.

**LEOR 3360. Future Directions of Organizations. 3 cr. hrs.**

Examines current issues facing organizations in planning and managing change efforts and how leadership styles impact the organization. Prepares students to influence the human side of developing and implementing changes in organizations. By combining theory and exercises, students will better understand the socio-technical perspective of change, see leadership as invoking followership, and grasp the significance of values-based leadership. Prereq: Enrolled in Professional Studies and LEOR 3340.

**LEOR 3380. Facets of Organizational Development and Change. 3 cr. hrs.**

Addresses specific aspects of organizational development. Career development, organizational assessment and appraisal, and program evaluation will be further explored. Students examine theoretical and practical perspectives, approaches, and skills. The larger political, administrative and ethical issues are also examined. Prereq: Enrolled in the College of Professional Studies; LEOR 3340.

**LEOR 3390. Organizational Strategies. 3 cr. hrs.**

Investigates how to craft, implement and execute organization strategies. The importance of identifying and determining the value-creating potential of a firm's resources, capabilities and core competencies are examined. The dynamics of strategic change in the complex global economy and at the corporate level are studied. Prereq: Enrolled in Professional Studies and LEOR 3320.

**LEOR 3410. Political Leadership. 3 cr. hrs.**

Basic political theory and principles will be examined using the writings of Plato, Aristotle, Marcus Aurelius, St. Augustine, St. Thomas Aquinas, Machiavelli, Hobbes, Locke, Montesquieu, Rousseau, Bentham, Marx, Spencer, and Gandhi. These theories will then be compared to the actions of political leaders during crises times, such as the U.S. Civil War, World Wars I and II, the Vietnam War, Civil Rights Movement, the Cold War, and the Suffrage Movement. Prereq: Enrolled in Professional Studies.

**LEOR 3420. Integrity in Leadership-Religious Perspectives. 3 cr. hrs.**

Considers the lives and teachings of some of history's outstanding religious leaders, including Jesus of Nazareth, David, St. Augustine, St. Ignatius of Loyola, Dietrich Bonhoeffer, Dorothy Day, Mahatma Gandhi, Martin Luther King, Jr., Thomas Merton, and Pope John Paul II. Through critical analysis of autobiographical, biographical, and primary texts, the course will examine the manner in which each figure exemplifies the theological virtues of faith, hope, and love, and how these virtues guide, drive, and inform their respective lives and leadership. Prereq: Enrolled in Professional Studies and THEO 1001.

**LEOR 3440. Leaders as Agents of Change. 3 cr. hrs.**

Focuses on the manifestation of social movements, with a special emphasis on the leaders in these movements. Through readings, film, primary and secondary research, as well as class participation, students will discover how social movement leaders emerge and the roles these leaders play in social movements and societies. Prereq: Enrolled in Professional Studies and LEOR 2100; LEOR 2050 recommended.

**LEOR 3460. Leaders in Literature. 3 cr. hrs.**

Through a variety of literary texts, this course will provide perspectives on leadership by examining past examples of leaders who have emerged from the imagination of writers past. As we read these texts we will examine and debate the relevance of leadership figures in literature as embodiments of great ideas and moral concerns. We will contrast them to contemporary experiences and conduct, both professional and personal, as a means for establishing the value of such literary constructs to the formation of our own ideas and understanding of leadership. Study of leaders in literature will expand to the historical and literary contexts in which the works were created and from which the authors are writing. Students will develop an increasingly sophisticated understanding of literary period, and will be challenged to see the value of such literary works as powerful constructions of human imagination and spirit. Exposure to a variety of literary constructions of leadership can challenge students to develop a rich sense of their own leadership qualities and a method for reflecting upon, and analyzing the instances of leadership in their own workplaces and communities. Prereq: ENGL 1002.

**LEOR 3480. Historical Leadership during World Conflicts. 3 cr. hrs.**

Requires the student to examine leadership events during world conflicts and analyze them using leadership theories that elucidate the critical elements of leadership and decision making. These elements include how the leader(s) and followers exerted influence, decided upon goals and objectives, developed courses of action to attain those goals, and how they developed a shared sense of purpose to successfully implement a course of action. Students will develop case studies of key events and decisions. Prereq: Enrolled in Professional Studies and HIST 1001 and HIST 1002 and LEOR 2100.

**LEOR 3520. Nonprofit Leadership. 3 cr. hrs.**

A historical, sociological, and political examination of not-for-profit (NFP) organizations lays the foundation of this course. The course builds on that foundation to review current theories of leadership in not-for-profits and examines the impact of the leader on fund raising, public policy, meeting legal requirements, recruiting and mission. A special emphasis on mission in a NFP helps the student understand this strong guiding force for developing and sustaining a successful NFP. An optional service-learning opportunity will be built into the course. Prereq: Enrolled in Professional Studies and LEOR 2100.

**LEOR 3540. Leadership in Community-based Organizations. 3 cr. hrs.**

The importance of an involved citizenry as key to the preservation of a democratic society is examined in this course. The idea of servant leadership along with the study of community-based organizations provides a unique opportunity to examine the value of community-based organizations in American life. What social and/or political events give rise to community-based organizations? How do "ordinary" people emerge as leaders? To examine these questions, this class will explore strategies, tactics, motivation, community-building and leadership emergence. This course will also have an optional service-learning component. Prereq: LEOR 2100.

**LEOR 3610. Leaders as Communicators. 3 cr. hrs.**

Moves beyond the study of what a leader is to how a leader accomplishes. While examining how leaders use communication students will critically analyze these questions. What is the relationship between leadership and communication styles? What communication competencies are needed by organizational leaders? How do leaders use communication to facilitate change in organizations? How does an individuals' gender, race and/or ethnicity affect leadership and communication behaviors. Prereq: Enrolled in Professional Studies and LEOR 2050 and LEOR 2100.

**LEOR 3710. Information Systems for Management. 3 cr. hrs.**

An overview of the technological, managerial and organizational factors which impact information systems. The critical role of information systems at the operational, tactical and strategic levels of the organization will be examined. Advanced productivity application software projects. Prereq: Enrolled in Professional Studies and PRST 1110; suggest completion of 3 of the classes LEOR 2210, 2220, 2240, 2280.

**LEOR 3720. Multimedia. 3 cr. hrs.**

Integration of multiple media sources into effective desktop or Web-based presentations. Preparation of text, animation, graphics, sound, photo images and video components for incorporation in multimedia projects. Creation of several multimedia projects. Prereq: Enrolled in Professional Studies and PRST 1110.

**LEOR 3730. Introduction to Database Management Systems. 3 cr. hrs.**

A survey of hierarchical, network and relational database models. Emphasis on the design, implementation and management of relational databases including coverage of normalization, structured query language, report generation and data security. Prereq: Enrolled in Professional Studies and PRST 1110.

**LEOR 3740. Data Communications and Networks. 3 cr. hrs.**

The process of designing and implementing a communications infrastructure to support various organization functions. The structure and elements of computer networks. Fundamentals of communication channels, protocols, standards and the Open Systems Interconnection reference model. Prereq: Enrolled in the College of Professional Studies and PRST 1110.

**LEOR 3750. Electronic Commerce. 3 cr. hrs.**

Technical and business aspects of electronic commerce. Creation of electronic commerce Web sites including business model evaluation, site design, marketing, security, payment and fulfillment systems. Use of Web authoring software to build a Web site. Prereq: PRST 1110.

**LEOR 3760. Information Systems Analysis, Design and Implementation. 3 cr. hrs.**

The application of the System Development Life Cycle method to building information systems. A survey of each phase of the cycle: project definition, systems study, design, programming, installation and maintenance including common techniques and tools. Prototyping, application software packages and outsourcing as alternative methods will be examined. Prereq: Enrolled in the College of Professional Studies and PRST 1100.

**LEOR 3770. Computer Programming. 3 cr. hrs.**

Fundamentals of computer programming. Formulation of problem statements, algorithm development, coding, testing and documentation using structured methodologies. Problem solving using basic programming control structures, data structures, and data, file and object manipulation techniques. Prereq: Enrolled in the College of Professional Studies; PRST 1140 and PRST 1110.

**LEOR 4931. Topics in Leadership and Organization. 1-3 cr. hr.**

Various topics selected from one of the various within organization and or leadership. Specific topics to be announced in the Schedule of Classes. Prereq: Enrolled in Professional Studies and Jr. stdng.

**LEOR 4995. Independent Study in Leadership and Organization. 1-3 cr. hr.**

Prereq: Enrolled in Professional Studies and cons. of dept. ch.; cons. of Dean of College of Professional Studies.

**LEOR 4997. Integrating Seminar. 3 cr. hrs.**

Interdisciplinary, capstone experience; concentration on leadership as an integrated theme; shaping individual theories and applications across the curriculum into a holistic approach; using leadership skills to promote the advancement of community and organizational goals. Completion of all previous course work required. Prereq: Enrolled in Professional Studies; Sr. stdng.

**Professional Studies****PRST 1001. Foundations of Learning. 3 cr. hrs.**

Orientation to the environment and demands of the college classroom and a Marquette education; readings and discussion in literature and humanities; exploration of the learning skills needed for academic success; critical thinking, writing, studying memory, note and test taking, library and others. S/U grade assessment. Prereq: Open to first-year College of Professional Studies students only.

**PRST 1005. Fundamentals of College Reading and Writing. 3 cr. hrs.**

Focus is on the reading and writing skills necessary for success in the college's core curriculum courses. Introduces students to the critical reading strategies required in an academic setting and to the elements of the composing process (prewriting, drafting, editing and revising). Course covers the basic writing skills of various essay structures and grammar conventions. Students are instructed on how to write essays using scholarly sources and appropriate documentation (APA). Close collaboration with the university's librarians help students establish a research environment for this and future courses. Students are expected to write often, participate in peer review and become critical readers of their own work. Students may be required to register for this course upon recommendation of the admission committee as a condition of enrollment.

**PRST 1110. Introduction to Information Systems. 3 cr. hrs.**

Fundamental information technology concepts and processes. An introduction to the major productivity application software packages and computer-based research. Prereq: Enrolled in Professional Studies.

**PRST 1120. Aspects of Modern Science. 3 cr. hrs.**

An interdisciplinary, integrated study of processes and principles of modern biology, chemistry, and physics. Scientific inquiry as a means of knowledge; major technological contributions to modern societies: stability, information transfer, and evolution of biological systems, emphasizing relevant chemical and physical processes in specific environments. Accepted as natural science requirement for Leadership and Organization students only. Prereq: Enrolled in Professional Studies.

**PRST 1140. Foundations of Applied Mathematics. 3 cr. hrs.**

This course includes the development of computational skills and the application of mathematics in business and other organizational disciplines. Topics will include algebraic operation, formula use and interpretation, equations and inequalities, graphs and functions, probability concepts, mathematics of finance, linear systems and linear programming. Prereq: Enrolled in Professional Studies; two years of college preparatory mathematics.

**PRST 2110. Principles of Liberal Studies. 3 cr. hrs.**

Introduction to the disciplinary frameworks of the common core offered by Marquette University. Its purpose is to promote lifelong learning, and enhance the skills of analysis, problem solving, critical thinking, writing and communication needed for successful academic achievement in a liberal arts education. The course develops a common ground of understanding and values among students through shared knowledge of the liberal arts. The course offers students an opportunity to enhance their critical thinking, oral expression and writing. Prereq: Enrolled in Professional Studies; ENGL 1001 and ENGL 1002 or equiv.

**PRST 2140. Research and Statistical Methods. 3 cr. hrs.**

Introduction to research and statistical methods used in business-related decisions; descriptive statistics; probability theory and distributions; sampling and sampling distributions; estimations and inferences; hypothesis testing; chi-squared and testing goodness-of-fit; contingency tables; correlation and regression. Prereq: Enrolled in Professional Studies; MATH 1100 or PRST 1140 recommended.

**PRST 3110. Research and Inquiry Methods. 3 cr. hrs.**

An upper-level course designed to expose the learner to the methods and means of scientific inquiry. The course offers the student three topical emphases to explore: multi-disciplinary case analyses, an examination of ethical issues in research and reporting, and statistical software use. Students will construct a survey instrument, practice focus group studies and engage in comparative analysis through group work. An introductory statistics course is required as a prerequisite. Prereq: Enrolled in the College of Professional Studies; PRST 2140 or equiv.

**PRST 3986. Internship in Professional Studies. 1-3 cr. hr.**

Field experience in government, non-profit, corporate, and/or other administrative law agencies for the purpose of furthering the student's integration of theory, skills, and practice as related to a student's major or minor within a professional organizational setting. Experiential opportunities are augmented with selected readings, reflective journals, papers, and in-class seminars. Prereq: Enrolled in Professional Studies; Jr. stdng.; cum GPA of 2.000; ENGL 1001, ENGL 1002, and LEOR 2100 or CMST 1000, or CRLS 1001.



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Honorary Consul General of the Republic of Honduras

Rev. Thomas H. Tobin  
Professor of Theology, Loyola University Chicago

Rev. L. John Topel  
Arts '73  
Pastor, St. Mary's Star of the Sea Parish

## Academic Senate 2011-12

James South (Chair)  
Philosophy Department Faculty elected at large-2013

John J. Pauly (Co-Chair)  
Provost Ex-Officio

Patricia Cervenka (Vice-Chair)  
Law School Elected faculty-2013

Lea Acord (Secretary)  
College of Nursing Faculty elected at large-2013

Albert Abena  
School of Dentistry Elected faculty-2012

Eugenia Afinoguenova  
Klingler College of Arts and Sciences Elected faculty-2014

Harshit Aggarwal  
School of Dentistry Elected faculty-2014

Raquel Aguilo de Murphy  
Foreign Languages and  
Literature Faculty elected at large-2014

Lori Bergen  
Diederich College of Communication Dean's Representative

Margaret L. (Peggy) Bloom  
College of Education Elected faculty-2014

Bruce Boyden  
Law School Elected faculty-2014

Margaret Faut Callahan  
College of Nursing Dean's Representative

Sharon Chubbuck  
College of Education Elected faculty-2012

Joey Ciccone  
Marquette University Student Government Student Representative-2012

Rev. Michael Class  
College of Professional Studies Elected faculty-2013

James Courtright  
Klingler College of Arts and Sciences Elected faculty-2013

Robert J. Deahl  
College of Professional Studies Dean's Representative

Alexander Drakopoulos  
College of Engineering Elected faculty-2013

Marilyn Frenn  
College of Nursing Elected faculty-2014

Gregory Gillman  
Graduate/Professional Student Student Representative-2012

Steven Goldzwig  
Diederich College of Communication Elected faculty-2013

Ann Hanlon  
Academic Library Association Elected faculty librarian-2012

John Heflin  
Marquette University Student Government Student Representative-2012

Jeanne Hossenlopp  
Vice Provost for Research and Dean of the Graduate School Ex-Officio

Sandra Hunter  
College of Health Sciences Elected faculty-2013

Peter Jones  
Mathematics, Statistics and Computer Sciences Department Faculty elected at large-2013

Christine Krueger  
English Department Faculty elected at large-2012

Cheryl Maranto  
College of Business Administration Elected  
faculty-2014

Gary S. Meyer  
Vice Provost for Undergraduate Programs and  
Teaching Ex-Officio

Maureen O'Brien  
College of Nursing Elected faculty-2012

Rev. Philip J. Rossi  
Interim Dean, Klingler College of Arts and  
Sciences Ex-Officio

Heidi Schweizer  
College of Education Faculty elected at large-2012

Guy Simoneau  
College of Health Sciences Elected faculty-2012

Dawn Smith  
Physician Assistant Studies Part-time faculty  
elected at large-2014

John Su  
Klingler College of Arts and Sciences Elected  
faculty-2012

Siddhartha Syam  
College of Business Administration Elected  
faculty-2012

William J. Thorn  
Journalism Department Faculty elected at  
large-2012

Janice Welburn  
College of Libraries Dean's Representative

G.E. Otto Widera  
College of Engineering Elected faculty-2014

Joyce Wolburg  
Diederich College of Communication Elected  
faculty-2012

## Corporate Officers of the University 2011-12

Darren R. Jackson  
Chair

John F. Ferraro  
Vice Chair

Mary Ellen Stanek  
Vice Chair

Charles H. Swoboda  
Vice Chair

Rev. Scott R. Pilarz  
President, Marquette University

Mary L. Austin  
Assistant Treasurer

Cynthia M. Bauer  
Assistant Secretary

Steven W. Frieder  
Corporate Secretary

John C. Lamb  
Treasurer

John J. Pauly  
Corporate Vice President

## Major Staff Officers of the University 2011-12

Rana H. Altenburg  
Vice President for Public Affairs

Rev. Scott R. Pilarz  
President

John J. Pauly  
Provost

Cynthia M. Bauer  
Vice President and General Counsel

Patricia L. Geraghty  
Vice President for Marketing and Communication

Jeanne M. Hossenlopp  
Vice Provost for Research and Dean of the  
Graduate School

John C. Lamb  
Vice President for Finance

Gary Meyer  
Vice Provost for Undergraduate Programs and  
Teaching

L. Christopher Miller  
Vice President for Student Affairs

Stephanie J. Russell  
Vice President for Mission Ministry

Arthur Scheuber  
Vice President for Administration

Julie A. Tolan  
Vice President for University Advancement

## **Academic Deans and Registrar 2011-12**

Lori Bergin (Dean)  
Diedrich College of Communication

Robert Bishop (OPUS Dean)  
College of Engineering

Margaret Faut Callahan (Dean)  
College of Nursing

William E. Cullinan Ph.D. (Dean)  
College of Health Sciences

Robert J. Deahl (Dean)  
College of Professional Studies

William A. Henk (Dean)  
College of Education

William K. Lobb (Dean)  
School of Dentistry

Rev. Philip J. Rossi (Interim Dean)  
Klingler College of Arts and Sciences

Linda Salchenberger (James H. Keyes Dean)  
College of Business Administration/Graduate  
School of Management

Janice Welburn (Dean)  
Libraries

Georgia McRae (University Registrar)  
Office of the Provost

## **University Board of Undergraduate Studies 2011-12**

Christine Shaw (Chair)  
College of Nursing 2014

Noel S. Adams  
Klingler College of Arts and Sciences/Humanities  
2014

Sandra Cleveland  
College of Professional Studies 2012

Sarah Bonewits Feldner  
Diederich College of Communication (replaced in  
Fall 2011) 2013

Kathleen Ford  
Marquette University Student Government/  
Undergraduate Student 2012

M. Behnam Ghasemzadeh  
College of Health Sciences 2012

Matt Hurley  
Marquette University Student Government/  
Undergraduate Student 2012

Gary S. Meyer  
Vice Provost for Undergraduate Programs and  
Teaching Ex-Officio

Kristy A. Nielson  
Klingler College of Arts and Sciences/Social  
Sciences (Oswald replacement) Spring 2012

Debra L. Oswald  
Klingler College of Arts and Sciences/Social  
Sciences (replaced, Spring 2012) 2014  
Sabbatical: Spring 2012

Stephanie Quade  
Sr. Associate Vice President  
Dean of Student Development Ex-Officio

James E. Richie  
College of Engineering 2012

William J. Thorn  
Senator Liaison Annual

Peter G. Toumanoff  
College of Business Administration 2013

Joan Whipp  
College of Education 2014

Joyce Wolburg  
Diederich College of Communication (Feldner  
replacement) Fall 2011

Chae S. Yi  
Klingler College of Arts and Sciences/Natural  
Sciences 2012

## Faculty and Administration 2011-12

### Klingler College of Arts and Science

#### Administrators

Rev. Phillip J. Rossi, S.J., Ph.D.  
Interim Dean, Klingler College of Arts and Sciences  
Professor of Theology

Belen S. Castaneda, Ph.D.  
Associate Dean  
Associate Professor of Spanish

William A. Donaldson, Ph.D.  
Associate Dean  
Professor of Chemistry

Mary F. Dunnwald, M.B.A.  
Associate Dean

Mary L. Minson, M.S.  
Senior Assistant Dean and Director, College Advising Center

Stephani Richards-Wilson, Ph.D.  
Assistant Dean

Susan A. Farrell, B.A.  
Director, College Administration

Pauline N. Thomas, M.S.  
Director, Student Records

#### Faculty and Department Administrators

Allison L. Abbott, Ph.D.  
Tufts University  
Assistant Professor of Biological Sciences

Noel S. Adams, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Philosophy

Eugenia V. Afinoguenova, Ph.D.  
Georgetown University  
Associate Professor of Spanish

Raquel Aguila de Murphy, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Spanish

Sheikh Ahamed, Ph.D.  
Arizona State University  
Associate Professor of Mathematics, Statistics and Computer Science

James T. Anderson, Ph.D.  
University of Florida-Gainesville  
Associate Professor of Biological Sciences

Thomas C. Anderson, Ph.D.  
Marquette University  
Professor Emeritus of Philosophy

Lauren Applegate, M.A.  
University of California-Santa Barbara  
Adjunct Instructor of Spanish

Robert B. Ashmore, Ph.D.  
University of Notre Dame  
Professor Emeritus of Philosophy

Carolyn A. Asp, Ph.D.  
University of Chicago  
Professor Emerita of English

Vaughn S. Ausman, M.A.  
Harvard University  
Laboratory Supervisor, Chemistry

Rev. Steven M. Avella, Ph.D.  
University of Notre Dame  
Professor of History

Julia Azari, Ph.D.  
Yale University  
Assistant Professor of Political Science

Dmitri Babikov, Ph.D.  
Moscow Institute of Physics and Technology  
Associate Professor of Chemistry  
Sabbatical: 2011-12

Alan M. Ball, Ph.D.  
University of North Carolina-Chapel Hill  
Professor of History  
Sabbatical: 2011-12

Paul J. Bankston, Ph.D.  
University of Wisconsin-Madison  
Professor of Mathematics, Statistics and Computer Science

Naveen K. Bansal, Ph.D.  
University of Pittsburgh  
Professor of Mathematics, Statistics and Computer Science

Michel R. Barnes, Ph.D.  
University of St. Michael's College-Toronto  
Associate Professor of Theology

Lowell W. Barrington, Ph.D.  
University of Michigan  
Associate Professor of Political Science  
Director of Graduate Studies  
Sabbatical: 2011-12

Milton J. Bates, Ph.D.  
University of California-Berkeley  
Professor Emeritus of English

Capt Joseph Bauknecht, M.S.  
Naval Post Graduate School  
Professor of Naval Science  
Chair, Naval Science

Stephen Beall, Ph.D.  
University of California-Berkeley  
Associate Professor of Classics

Pilar Bellver, Ph.D.  
University of Pittsburgh  
Assistant Professor of Spanish

Ian Bentley, Ph.D.  
University of Notre Dame  
Visiting Assistant Professor of Physics

Karel D. Bicha, Ph.D.  
University of Minnesota-Twin Cities  
Professor Emeritus of History

Rev. Ronald Bieganowski, S.J., Ph.D.  
Fordham University  
Adjunct Associate Professor of English

Amy L. Blair, Ph.D.  
Cornell University  
Assistant Professor of English

Edwin Block, Ph.D.  
Stanford University  
Professor of English

Edward Blumenthal, Ph.D.  
Yale University  
Associate Professor of Biological Sciences  
Sabbatical: 2011-12

Mary-Catherine Bodden, Ph.D.  
University of Toronto  
Associate Professor of English

Janet K. Boles, Ph.D.  
University of Texas-Austin  
Professor Emerita of Political Science

John R. Boly, Ph.D.  
Yale University  
Associate Professor of English

Christian C. Braunschweiger, Ph.D.  
University of Wisconsin-Madison  
Professor Emeritus of Mathematics, Statistics and  
Computer Science

Charles H. Breeden, Ph.D.  
Virginia Polytechnic Institute  
Associate Professor of Economics

Risa Brooks, Ph.D.  
University of California-San Diego  
Assistant Professor of Political Science

J. Glenn Brookshear, Ph.D.  
New Mexico State University  
Associate Professor Emeritus of Mathematics,  
Statistics and Computer Science

Benjamin L. Brown, Ph.D.  
Brandeis University  
Professor of Physics  
Chair, Physics

Brian C. Brush, Ph.D.  
University of North Carolina-Chapel Hill  
Professor of Economics

Dennis W. Brylow, Ph.D.  
Purdue University  
Assistant Professor of Mathematics, Statistics and  
Computer Science

James Buchanan, Ph.D.  
Washington University at St. Louis  
Professor of Biological Sciences  
Chair, Institutional Animal Care and Use  
Committee

David R. Buckholdt, Ph.D.  
Washington University at St. Louis  
Professor of Sociology

Rev. Thaddeus J. Burch, S.J., S.T.L., Ph.D.  
Fordham University  
Director, Special Projects in the Graduate School

Omega Burckhardt, M.A.  
University of Kansas  
Adjunct Instructor of Spanish

Joshua Ezra Burns, Ph.D.  
Yale University  
Assistant Professor of Theology

Capt. Nicholas Busalacki, USAF, B.S.  
Saint Louis University  
Assistant Professor of Aerospace Studies

Karl E. Byleen, Ph.D.  
University of Nebraska-Lincoln  
Associate Professor of Mathematics, Statistics and  
Computer Science

Guipeng Cai, Ph.D.  
Shandong University  
Postdoctoral Fellow in Chemistry

Sheng Cai, Ph.D.  
University of Arizona  
NMR Laboratory Supervisor, Chemistry

Louise A. Cainkar, Ph.D.  
Northwestern University  
Assistant Professor of Social Welfare and Justice

Patrick W. Carey, Ph.D.  
Fordham University  
Distinguished Professor of Theology and William J. Kelly, S.J. Chair, Theology

Consuelo Carrillo, M.A.  
Marquette University  
Adjunct Instructor of Spanish

German D. Carrillo, Ph.D.  
University of Illinois at Urbana-Champaign  
Associate Professor of Spanish

Curtis L. Carter, Ph.D.  
Boston University  
Professor of Philosophy

Belen S. Castaneda, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Spanish  
Associate Dean

Allen Chaparadza, Ph.D.  
Portland State University  
Postdoctoral Research Associate in Chemistry

Virginia A. Chappell, Ph.D.  
University of Washington  
Associate Professor of English  
Director, First-Year English Program  
Sabbatical: 2011-12

Julia M. Chavez, Ph.D.  
University of Wisconsin-Madison  
Visiting Assistant Professor of English

Abdur R. Chowdhury, Ph.D.  
University of Kentucky  
Professor of Economics  
Chair, Economics

David E. Clark, Ph.D.  
Binghamton University  
Professor of Economics

Anne V. Clough, Ph.D.  
University of Arizona  
Professor of Mathematics, Statistics and Computer Science

Rev. David M. Coffey, S.T.D.  
Theological Faculty of Sydney  
Professor Emeritus of Theology

Roberta L. Coles, Ph.D.  
University of Wisconsin-Madison  
Professor of Sociology  
Chair, Social and Cultural Sciences

Joseph M. Collins, Ph.D.  
Illinois Institute of Technology  
Associate Professor of Physics

Dinorah Cortes-Velez, Ph.D.  
University of Wisconsin-Madison  
Assistant Professor of Spanish

James B. Courtright, Ph.D.  
Johns Hopkins University  
Professor of Biological Sciences

Alexandra L. Crampton, Ph.D.  
University of Michigan-Ann Arbor  
Assistant Professor of Social Welfare and Justice

Deborah D. Crane, M.S.W.  
University of Denver  
Adjunct Assistant Professor of Social Welfare and Justice

Steven E. Crane, Ph.D.  
University of Colorado at Boulder  
Associate Professor of Economics

Sheldon E. Cremer, Ph.D.  
University of Rochester  
Professor Emeritus of Chemistry

Timothy D. Crockett, Ph.D.  
University of California-Berkeley  
Assistant Professor of Philosophy

John E. Curran, Ph.D.  
University of Virginia  
Professor of English  
Sabbatical: 2011-12

Kazimierz Czarnecki, Ph.D.  
Marquette University  
Senior Research Associate in Chemistry

Donald A. Czech, Ph.D.  
Syracuse University  
Associate Professor Emeritus of Psychology

D. Lyle Dabney, Dr. Theol.  
Eberhard-Karis Universität-Tübingen  
Associate Professor of Theology

Scott Dale, Ph.D.  
University of Pennsylvania  
Associate Professor of Spanish

Joseph P. Daniels, Ph.D.  
Indiana University-Bloomington  
Professor of Economics

Sarah P. Davies Cordova, Ph.D.  
University of California-Los Angeles  
Associate Professor of French

John D. Davis, Ph.D.  
Michigan State University  
Professor of Economics

Ed de St. Aubin, Ph.D.  
Northwestern University  
Associate Professor of Psychology  
Assistant Chair, Psychology

Robert J. Deahl, Ph.D.  
Gregorian University-Rome  
Assistant Professor of Theology  
Dean, College of Professional Studies

Joseph M. Defalco, Ph.D.  
University of Florida  
Professor Emeritus of English

Ralph G. Del Colle, Ph.D.  
Union Theological Seminary-New York  
Associate Professor of Theology

Deirdre A. Dempsey, Ph.D.  
The Catholic University of America  
Associate Professor of Theology  
Assistant Chair, Theology

Boubakary Diakite, Ph.D.  
Louisiana State University-Baton Rouge  
Visiting Assistant Professor of French

Darrell D. Dobbs, Ph.D.  
University of Rochester  
Professor of Political Science

William A. Donaldson, Ph.D.  
Dartmouth College  
Professor of Chemistry  
Associate Dean

Rev. John P. Donnelly, S.J., Ph.D.  
University of Wisconsin-Madison  
Professor Emeritus of History

Michael E. Donoghue, Ph.D.  
University of Connecticut  
Assistant Professor of History

Rev. Robert M. Doran, S.J., Ph.D.  
Marquette University  
Distinguished Professor of Theology  
Emmett Doerr Chair, Catholic Systematic Theology

Stephen M. Downs, Ph.D.  
University of Iowa  
Wehr Distinguished Professor of Biological Sciences

Jeffrey Drope, Ph.D.  
University of New Mexico  
Assistant Professor of Political Science

Michael K. Duffey, Ph.D.  
University of Notre Dame  
Associate Professor of Theology  
Sabbatical: 2011-12

Edward T. Duffy, Ph.D.  
Columbia University  
Professor Emeritus of English

Thomas J. Eddinger, Ph.D.  
University of Wisconsin-Madison  
Professor of Biological Sciences

Alison Clark Efford, Ph.D.  
The Ohio State University  
Assistant Professor of History

Ana Escudero, M.A.  
Marquette University  
Adjunct Instructor of Spanish

Kim A. S. Factor, Ph.D.  
University of Colorado at Denver  
Associate Professor of Mathematics, Statistics and Computer Science

Rev. Michael A. Fahey, S.J., Dr. Theol.  
Eberhard-Karis Universitat-Tubingen  
Professor Emeritus of Theology

Mary Ann Farkas, Ph.D.  
Michigan State University  
Associate Professor of Criminology and Law Studies

Adam T. Fiedler, Ph.D.  
University of Wisconsin-Madison  
Assistant Professor of Chemistry

Jennifer Fishman, Ph.D.  
Stanford University  
Assistant Professor of English

Robert H. Fitts, Ph.D.  
University of Wisconsin-Madison  
Professor of Biological Sciences  
Chair, Biological Sciences

Leah Flack, Ph.D.  
Northwestern University  
Assistant Professor of English



Michael H. Fleet, Ph.D.  
University of California-Los Angeles  
Professor of Political Science  
Director, Undergraduate Studies

Tol Foster, Ph.D.  
University of Wisconsin-Madison  
Assistant Professor of English

A. Kristen Foster, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of History

Susanne E. Foster, Ph.D.  
University of Notre Dame  
Associate Professor  
Assistant Chair, Philosophy

Stephen L. Franzoi, Ph.D.  
University of California-Davis  
Professor of Psychology  
Sabbatical: 2011-12

H. Richard Friman, Ph.D.  
Cornell University  
Professor of Political Science  
Eliot Fitch Chair, International Studies

Lt Aaron J. Gall, USN, B.S., Masters (Cand.)  
Marquette University  
Assistant Professor of Naval Science

James R. Gardinier, Ph.D.  
State University of New York at Buffalo  
Associate Professor of Chemistry

David E. Gardinier, Ph.D.  
Yale University  
Professor Emeritus of History

Rong Ge, Ph.D.  
Virginia Polytechnic Institute and State University  
Assistant Professor of Mathematics, Statistics and  
Computer Science

Sarah E. Gendron, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of French

Lisa George, Ph.D.  
University of Madras  
Postdoctoral Fellow in Chemistry

Alyson C. Gerdes, Ph.D.  
Purdue University  
Associate Professor of Psychology

Susan M. Giaimo, Ph.D.  
University of Wisconsin-Madison  
Visiting Assistant Professor of Political Science

Kevin W. Gibson, Ph.D.  
University of Colorado at Boulder  
Associate Professor of Philosophy

Beth Godbee, Ph.D.  
University of Wisconsin-Madison  
Assistant Professor of English

Owen M. Goldin, Ph.D.  
University of Texas-Austin  
Professor of Philosophy

Rev. Alexander G. Golitzin, D. Phil.  
University of Oxford  
Professor of Theology

Armando Gonzalez-Perez, Ph.D.  
Michigan State University  
Professor of Spanish

Nakia S. Gordon, Ph.D.  
Bowling Green State University  
Assistant Professor of Psychology

Amara A. Graf, Ph.D.  
University of Texas-Austin  
Visiting Assistant Professor of English

John H. Grych, Ph.D.  
University of Illinois at Urbana-Champaign  
Professor of Psychology  
Chair, Psychology

Stephen J. Guastello, Ph.D.  
Illinois Institute of Technology  
Professor of Psychology

Kenneth G. Hagen, Ph.D.  
Harvard University  
Professor Emeritus of Theology

Brooke L. Haley, M.A.  
University of Wisconsin-Milwaukee  
Lecturer of English as a Second Language

Gholamhossein G. Hamedani, Ph.D.  
Michigan State University  
Professor of Mathematics, Statistics and Computer  
Science

Ryan P. Hanley, Ph.D.  
University of Chicago  
Associate Professor of Political Science

Clemens B. Hanneken, Ph.D.  
University of Illinois at Urbana-Champaign  
Professor Emeritus of Mathematics, Statistics and  
Computer Science

Angelique Harris, Ph.D.  
Graduate Center, City University of New York  
Assistant Professor of Sociology

J. Douglas Harris, Ph.D.  
University of Kansas-Lawrence  
Professor of Mathematics, Statistics and Computer  
Science

Stanley M. Harrison, Ph.D.  
Fordham University  
Associate Professor of Philosophy

Steven Hartman-Keiser, Ph.D.  
The Ohio State University  
Associate Professor of English  
Sabbatical: 2011-12

Lt. Col Robert Hassler, USAF, B.S.  
Rensselaer Polytechnic Institute  
Professor of Aerospace Studies  
Chair, Aerospace Studies

Heather A. Hathaway, Ph.D.  
Harvard University  
Associate Professor of English

Robert P. Hay, Ph.D.  
University of Kentucky  
Associate Professor Emeritus of History

Carla H. Hay, Ph.D.  
University of Kentucky  
Associate Professor of History

Todd A. Hernandez, Ph.D.  
University of Kansas  
Associate Professor of Spanish

Julian V. Hills, Th.D.  
Harvard University  
Associate Professor of Theology  
Director, Graduate Studies in Fall 2011

William H. Hirsch, Ph.D.  
Wake Forest University  
Visiting Assistant Professor

Heather R. Hlavka, Ph.D.  
University of Minnesota-Twin Cities  
Assistant Professor of Criminology and Law  
Studies

James Hoelzle, Ph.D.  
University of Toledo  
Assistant Professor of Psychology

Diane L. Hoeveler, Ph.D.  
University of Illinois at Urbana-Champaign  
Professor of English

Norman E. Hoffman, Ph.D.  
Northwestern University  
Professor Emeritus of Chemistry

Karen Hoffman, Ph.D.  
University of Chicago  
Visiting Assistant Professor of Political Science

James A. Holstein, Ph.D.  
University of Michigan  
Professor of Sociology  
Assistant Chair, Social and Cultural Sciences

Jeanne M. Hossenlopp, Ph.D.  
Syracuse University  
Professor of Chemistry  
Vice Provost for Research and Dean of the  
Graduate School

Claude J. Hribal, M.A., Creative Writing  
Syracuse University  
Louise Edna Goeden Professor of English

Krassimira Hristova, Ph.D.  
Sofia University, Bulgaria  
Assistant Professor of Biological Sciences

Rev. D. Thomas Hughson, S.J., Ph.D.  
University of St. Michael's College-Toronto  
Associate Professor Emeritus of Theology

Javier A. Ibanez-Noe, Ph.D.  
University of Toronto  
Associate Professor of Philosophy

Mikhail Ivanov, Ph.D.  
Leningrad University  
Postdoctoral Fellow in Chemistry

Thomas J. Jablonsky, Ph.D.  
University of Southern California  
Professor of History  
Harry G. John Professor of Urban Studies  
Sabbatical: 2011-12

Robert L. Jamison, Ph.D.  
University of Washington  
Associate Professor of German

Thomas L. Jeffers, Ph.D.  
Yale University  
Professor of English

Ryan R. Jerving, Ph.D.  
University of Illinois at Urbana-Champaign  
Visiting Assistant Professor of English

Rev. Robert J. Joda, S.J., Ph.D.  
Northwestern University  
Assistant Professor of German

Mark F. Johnson, Ph.D.  
University of Toronto  
Associate Professor of Theology  
Sabbatical: 2011-12

Richard S. Jones, Ph.D.  
Iowa State University  
Associate Professor of Sociology  
Assistant Chair, Social and Cultural Sciences  
Sabbatical: 2011-12

Rev. John D. Jones, Ph.D.  
Boston College  
Professor of Philosophy

Peter R. Jones, Ph.D.  
Monash University-Australia  
Professor of Mathematics, Statistics and Computer Science

Thomas Kaczmarek, Ph.D.  
University of Pennsylvania-Philadelphia  
Adjunct Assistant Professor of Mathematics, Statistics and Computer Science and Director, MS in Computing

Lt Col Robert P. Kaderavek, USA, M.B.A.  
Harvard Business School  
Professor of Military Science and Leadership Chair, Military Science and Leadership

Giordana Kaftan, M.A.  
University of Wisconsin-Milwaukee  
Adjunct Instructor of Italian

Andrew W. Kahrl, Ph.D.  
Indiana University-Bloomington  
Assistant Professor of History

Howard P. Kainz, Ph.D.  
Duquesne University  
Professor Emeritus of Philosophy

John P. Karkheck, Ph.D.  
State University of New York at Stony Brook  
Professor of Physics

Kathleen M. Karrer, Ph.D.  
Yale University  
Clare Boothe Luce Professor of Biological Sciences

Astrida S. Kaugars, Ph.D.  
Case Western Reserve University  
Associate Professor of Psychology

Alice B. Kehoe, Ph.D.  
Harvard University  
Professor Emerita of Anthropology

Rev. William J. Kelly, S.J., S.T.D.  
Institut Catholique of Paris  
Associate Professor Emeritus of Theology

Daniel E. Khalastchi, M.F.A.  
University of Iowa  
Visiting Assistant Professor of English

James R. Kincaid, Ph.D.  
Marquette University  
Professor of Chemistry

Lezlie S. Knox, Ph.D.  
University of Notre Dame  
Associate Professor of History

Heather H. Kohls, Ph.D.  
University of Wisconsin-Milwaukee  
Adjunct Associate Professor of Economics

Chima Korieh, Ph.D.  
University of Toronto  
Associate Professor of History

Evgenii Kovrigin, Ph.D.  
Engelhardt Institute of Molecular Biology-Moscow  
Assistant Professor of Chemistry

Jeanette R. Kraemer, Ph.D.  
University of Minnesota-Twin Cities  
Associate Professor of French

Se Eun Krainz, M.A.  
University of Wisconsin-Milwaukee  
Adjunct Instructor of Japanese

Gary S. Krenz, Ph.D.  
Iowa State University  
Professor of Mathematics, Statistics and Computer Science  
Chair, Mathematics, Statistics and Computer Science

Rev. G. Thomas Krettek, S.J., Ph.D.  
The Catholic University of America  
Associate Professor of Philosophy  
Provincial, Wisconsin Province Jesuits

Christine L. Krueger, Ph.D.  
Princeton University  
Professor of English

John D. Krugler, Ph.D.  
University of Illinois at Urbana-Champaign  
Professor of History

Andrew B. Kunz, Ph.D.  
University of Minnesota-Twin Cities  
Associate Professor of Physics

Rev. William S. Kurz, S.J., Ph.D.  
Yale University  
Professor of Theology

Jean-Pierre Lafouge, Ph.D.  
Indiana University  
Associate Professor of French

Lt Col Albert A. Lagore, USMC, M.M.S.  
Marine Corps University  
Associate Professor of Naval Science

Andrew Larsen, Ph.D.  
University of Wisconsin-Madison  
Visiting Assistant Professor of History

Rev. John D. Laurance, S.J., Ph.D.  
University of Notre Dame  
Associate Professor of Theology

Willard E. Lawrence, Ph.D.  
University of Wisconsin-Madison  
Professor Emeritus of Mathematics, Statistics and Computer Science

Lawrence J. LeBlanc, Ph.D.  
University of Iowa  
Professor Emeritus of Political Science

Dong-Whan Lee, Ph.D.  
Inha University-Korea  
Postdoctoral Fellow in Chemistry

Corinna Lee, Ph.D.  
Cornell University  
Assistant Professor of English

Ulrich L. Lehner, Ph.D.  
University of Regensburg-Germany  
Assistant Professor of Theology

Noreen E. Lephardt, Ph.D.  
University of Tennessee-Knoxville  
Adjunct Associate Professor of Economics

Sergey V. Lindeman, Ph.D.  
Russian Academy of Science-Moscow  
Supervisor, X-ray Laboratory

D. Stephen Long, Ph.D.  
Duke University  
Professor of Theology

H. Sebastian Luft, Ph.D.  
University of Wuppertal- Germany  
Associate Professor of Philosophy

Tyler Luiten, Ph.D.  
University of Wisconsin-Madison  
Visiting Assistant Professor of German

Sandra D. Lukaszewski-Rose, Ph.D.  
University of Iowa  
Lab Coordinator, Chemistry

M. Therese Lysaught, Ph.D.  
Duke University  
Associate Professor of Theology

Nelson J. López Rojas, Ph.D.  
Binghamton University-New York  
Visiting Assistant Professor of Spanish

Tim W. Machan, Ph.D.  
University of Wisconsin-Madison  
Professor of English

Praveen Madiraju, Ph.D.  
Georgia State University  
Associate Professor of Mathematics, Statistics and  
Computer Science

Marta Magiera, Ph.D.  
Illinois Institute of Technology  
Assistant Professor of Mathematics, Statistics and  
Computer Science

Daniel C. Maguire, S.T.D.  
Gregorian University-Rome  
Professor of Theology

Piotr Mak, Ph.D.  
Jagiellonian University  
Research Associate in Chemistry

James S. Maki, Ph.D.  
University of Wisconsin-Milwaukee  
Associate Professor of Biological Sciences

Anita Manogaran, Ph.D.  
Marquette University  
Visiting Assistant Professor of Biological Sciences

Marian L. Manyo, M.S.  
Purdue University  
Adjunct Instructor of Mathematics, Statistics and  
Computer Science  
Assistant Chair, Mathematics, Statistics and  
Computer Science

Patricia A. Marquardt, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Classics

James A. Marten, Ph.D.  
University of Texas-Austin  
Professor of History  
Chair, History  
Sabbatical: 2011-12

Jessica A. Martin, M.A.  
University of Wisconsin-Milwaukee  
Adjunct Instructor of Spanish

Rev. Bryan N. Massingale, S.T.D.  
Academia Alphonsianum- Rome  
Associate Professor of Theology

Robert L. Masson, Ph.D.  
Fordham University  
Associate Professor of Theology

Laura E. Matthew, Ph.D.  
University of Pennsylvania  
Assistant Professor of History

Rev. Donald R. Matthys, S.J., Ph.D.  
Washington University at St. Louis  
Professor of Physics  
Sabbatical: 2011-12

Ann Mattis, Ph.D.  
Loyola University-Chicago  
Visiting Assistant Professor of English

Mickey L. Mattox, Ph.D.  
Duke University  
Associate Professor of Theology  
Director, Undergraduate Studies

Zvonimir Matusinovic, Ph.D.  
University of Zagreb-Croatia  
Postdoctoral Fellow in Chemistry

John C. McAdams, Ph.D.  
Harvard University  
Associate Professor of Political Science

Michael F. McCanles, Ph.D.  
University of Kansas  
Professor Emeritus of English

Barrett L. McCormick, Ph.D.  
University of Wisconsin-Madison  
Professor of Political Science  
Chair, Political Science

David P. McDaniel, Ph.D.  
University of Wisconsin-Madison  
Visiting Assistant Professor of History

Rita T. McDonald, Ph.D.  
Loyola University-Chicago  
Associate Professor Emerita of Psychology

James M. McGibany, Ph.D.  
Michigan State University  
Associate Professor of Economics  
Executive Associate Dean, Business  
Administration

Michael A. McKinney, Ph.D.  
Illinois Institute of Technology  
Professor Emeritus of Chemistry

Timothy G. McMahon, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of History

Daniel J. Meissner, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of History

Jodi L. Melamed, Ph.D.  
Columbia University  
Associate Professor of English

Kenneth A. Mendelson, Ph.D.  
Purdue University  
Professor Emeritus of Physics

Ann Menefee, Ph.D.  
University of Wisconsin-Madison  
Postdoctoral Fellow in Biological Sciences

Stephen J. Merrill, Ph.D.  
University of Iowa  
Professor of Mathematics, Statistics and Computer  
Science  
Sabbatical: 2011-12

Donald L. Metz, Ph.D.  
University of California-Berkeley  
Associate Professor Emeritus of Sociology

Jason B. Meyler, Ph.D.  
Stony Brook University  
Assistant Professor of Spanish

Gale E. Miller, Ph.D.  
University of Kansas  
Research Professor of Social and Cultural  
Sciences  
Sabbatical: 2011-12

Paul Misner, Th.D.  
University of Munich-Germany  
Professor Emeritus of Theology

David O. Moberg, Ph.D.  
University of Minnesota-Twin Cities  
Professor Emeritus of Sociology

Michael J. Monahan, Ph.D.  
University of Illinois at Urbana-Champaign  
Associate Professor of Philosophy  
Director, University Core Curriculum

Dawne Moon, Ph.D.  
University of Chicago  
Assistant Professor of Sociology

Rodrigo J. Morales, Ph.D.  
Duke University  
Assistant Professor of Theology

Ryan Mott, Ph.D.  
University of Colorado at Boulder  
Visiting Assistant Professor of Philosophy

John C. Moyer, Ph.D.  
Northwestern University  
Professor of Mathematics, Statistics and Computer  
Science

Rev. Joseph G. Mueller, S.J., S.T.D.  
Centre Sèvres-Paris  
Associate Professor of Theology  
Director, Graduate Studies in Spring 2012  
Sabbatical: Fall 2011

Sameena A. Mulla, Ph.D.  
Johns Hopkins University  
Assistant Professor of Anthropology

Stephen H. Munroe, Ph.D.  
Indiana University  
Professor of Biological Sciences

Michelle Mynlieff, Ph.D.  
University of Colorado-Health Sciences Center  
Associate Professor of Biological Sciences

Phillip C. Naylor, Ph.D.  
Marquette University  
Professor of History

Kristy A. Nielson, Ph.D.  
Southern Illinois University-Carbondale  
Professor of Psychology

K. Dale Noel, Ph.D.  
University of California-Berkeley  
Professor of Biological Sciences  
Sabbatical: 2011-12

Paul Nolette, Ph.D.  
Boston College  
Assistant Professor of Political Science

Kimberly Norden, Ph.D.  
State University of New York at Stonybrook  
Visiting Assistant Professor of Psychology

Farrokh Nourzad, Ph.D.  
University of Kansas  
Professor of Economics

Rebecca S. Nowacek, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of English

Danielle K. Nussberger, Ph.D.  
University of Notre Dame  
Assistant Professor of Theology

Rev. Timothy J. O'Brien, Ph.D.  
The Catholic University of America  
Adjunct Professor of American Government  
Director, Les Aspin Center for Government

Irfan A. Omar, Ph.D.  
Temple University  
Associate Professor of Theology  
Sabbatical: 2011-12

Andrei A. Orlov, Ph.D.  
Marquette University  
Associate Professor of Theology

Debra L. Oswald, Ph.D.  
St. Louis University  
Associate Professor of Psychology  
Sabbatical: 2011-12

Enaya Othman, Ph.D.  
Marquette University  
Visiting Assistant Professor of Arabic

Sharon P. Pace, Ph.D.  
University of Notre Dame  
Associate Professor of Theology

Maria Pares-Toral, M.A.  
University of Wisconsin-Milwaukee  
Adjunct Instructor of Spanish

Heaweon Park, Ph.D.  
University of Iowa  
Postdoctoral Fellow in Chemistry

Anne M. Pasero, Ph.D.  
University of Southern California  
Associate Professor of Spanish  
Administrative Director, Study Center in Madrid

Francis J. Pastijn, Ph.D.  
Rijksuniversiteit te Gent- Belgium  
Professor of Mathematics, Statistics and Computer Science  
Sabbatical: 2011-12

Julia A. Paulk, Ph.D.  
Indiana University-Bloomington  
Assistant Professor of Spanish

Anthony F. Peressini, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Philosophy  
Director, Honors Program

Jane D. Peterson, Ph.D.  
Arizona State University  
Associate Professor of Anthropology  
Sabbatical: 2011-12

Amalia Y. Petrussha, M.A.  
Marquette University  
Adjunct Instructor of Spanish

J. Michael Phayer, Ph.D.  
University of Munich-Germany  
Professor Emeritus of History

Bela E. Piacsek, Ph.D.  
Michigan State University  
Professor Emeritus of Biological Sciences

Michael J. Politano, Ph.D.  
University of Illinois at Urbana-Champaign  
Associate Professor of Physics

Anthony Porcelli, Ph.D.  
Rutgers University  
Assistant Professor of Psychology

Thomas L. Prendergast, Ph.D.  
St. Louis University  
Associate Professor Emeritus of Philosophy

Dana E. Prodoehl, Ph.D.  
Marquette University  
Visiting Assistant Professor of English

Rev. Francis Paul Prucha, S.J., Ph.D.  
Harvard University  
Professor Emeritus of History

John S. Pustejovsky, Ph.D.  
University of Texas-Austin  
Associate Professor of German  
Chair, Foreign Languages and Literatures

Krista L. Ratcliffe, Ph.D.  
The Ohio State University  
Professor of English  
Chair, English

Rajendra Rathore, Ph.D.  
University of Western Ontario  
Professor of Chemistry

Marques Redd, Ph.D.  
University of California-Berkeley  
Assistant Professor of English

Scott A. Reid, Ph.D.  
University of Illinois at Urbana-Champaign  
Professor of Chemistry  
Chair, Chemistry

James M. Rhodes, Ph.D.  
University of Notre Dame  
Professor Emeritus of Political Science

Lee C. Rice, Ph.D.  
St. Louis University  
Associate Professor Emeritus of Philosophy

Jean M. Richie, M.A.  
University of Illinois at Urbana-Champaign  
Lecturer of English as a Second Language

Albert J. Rivero, Ph.D.  
University of Virginia  
Professor of English  
Sabbatical: 2011-12

Janell Romatowski, B.A.  
University of Wisconsin-Green Bay  
Laboratory Supervisor, Biological Sciences

Rev. Philip J. Rossi, S.J., Ph.D.  
University of Texas-Austin  
Interim Dean, Klingler College of Arts and Sciences  
Professor of Theology

Mary F. Rousseau, Ph.D.  
Marquette University  
Associate Professor Emerita of Philosophy

Daniel Rowe, Ph.D.  
University of California-Riverside  
Associate Professor of Mathematics, Statistics and Computer Science

Julius R. Ruff, Ph.D.  
University of North Carolina-Chapel Hill  
Professor of History

Wim B. Ruitenburg, Ph.D.  
State University-Utrecht, Netherlands  
Professor of Mathematics, Statistics and Computer Science

Michael D. Ryan, Ph.D.  
University of Wisconsin-Madison  
Professor of Chemistry  
Sabbatical: 2011-12

Eufemia Sanchez de la Calle, Ph.D.  
Michigan State University  
Associate Professor of Spanish

Rebecca L. Sanders, Ph.D.  
Bowling Green State University  
Associate Professor of Mathematics, Statistics and Computer Science

Stephen M. Saunders, Ph.D.  
Northwestern University  
Professor of Psychology

Jame E. Schaefer, Ph.D.  
Marquette University  
Associate Professor of Theology

Michael R. Schlappi, Ph.D.  
University of Basel-Switzerland  
Associate Professor of Biological Sciences

John J. Schmitt, Ph.D.  
University of Chicago  
Associate Professor Emeritus of Theology

David M. Schrader, Ph.D.  
University of Minnesota-Twin Cities  
Research Professor in Chemistry

Rev. David G. Schultenover, S.J., Ph.D.  
St. Louis University  
Professor of Theology

Gail L. Schumann, Ph.D.  
Cornell University  
Adjunct Professor of Biological Sciences

Sherry Scott, Ph.D.  
University of Maryland-College Park  
Assistant Professor of Mathematics, Statistics and Computer Science

Olga B. Semukhina, Ph.D., J.D.  
University of Central Florida, Tomsk State University, Russia  
Assistant Professor of Criminology and Law Studies

Anees A. Sheikh, Ph.D.  
University of Western Ontario  
Professor of Psychology

Melissa M. Shew, Ph.D.  
University of Oregon  
Visiting Assistant Professor of Philosophy

Ruchi Shukla, Ph.D.  
Indian Institute of Technology-Delhi (New Delhi,  
India)  
Laboratory Coordinator, Chemistry

Mary Anne T. Siderits, Ph.D.  
University of Michigan  
Assistant Professor of Psychology

Michael C. Slattery, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Mathematics, Statistics and  
Computer Science

William G. Smiley, Ph.D.  
University of Iowa  
Professor Emeritus of Economics

Nancy E. Snow, Ph.D.  
University of Notre Dame  
Professor of Philosophy

Zbigniew Sorbjan, Ph.D.  
Warsaw Polytechnical University-Poland  
Research Associate Professor of Physics

Angela F. Sorby, Ph.D.  
University of Chicago  
Associate Professor of English

James B. South, Ph.D.  
Duke University  
Associate Professor of Philosophy  
Chair, Philosophy

Elaine Spiller, Ph.D.  
Northwestern University  
Assistant Professor of Mathematics, Statistics and  
Computer Science

Martin R. St. Maurice, Ph.D.  
Dalhousie University  
Assistant Professor of Biological Sciences

William C. Starr, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Philosophy

Peter Staudemaier, Ph.D.  
Cornell University  
Assistant Professor of History

Mark G. Steinmetz, Ph.D.  
University of Wisconsin-Madison  
Professor of Chemistry

Christopher J. Stockdale, Ph.D.  
University of Oklahoma  
Associate Professor of Physics  
Sabbatical: 2011-12

Meghan S. Stroshine, Ph.D.  
Michigan State University  
Associate Professor of Criminology and Law  
Studies

Rosemary Stuart, Ph.D.  
University of Munich-Germany  
Professor of Biological Sciences

John J. Su, Ph.D.  
University of Michigan  
Associate Professor of English

Norman C. Sullivan, Ph.D.  
University of Toronto  
Associate Professor of Anthropology

Duane H. Swank, Ph.D.  
Northwestern University  
Professor of Political Science

Andrew F. Tallon, Ph.D.  
Universite de Louvain  
Professor of Philosophy  
Director, Marquette University Press

Steven M. Taylor, Ph.D.  
Wayne State University  
Professor Emeritus of French

Richard C. Taylor, Ph.D.  
University of Toronto  
Professor of Philosophy  
Sabbatical: 2011-12

Rev. Roland J. Teske, S.J., Ph.D.  
University of Toronto  
Professor Emeritus of Philosophy

Athan G. Theoharis, Ph.D.  
University of Chicago  
Professor Emeritus of History

Raju G. C. Thomas, Ph.D.  
University of California-Los Angeles  
Professor Emeritus of Political Science

Robert G. Thomson, Ph.D.  
Marquette University  
Associate Professor Emeritus of Biological  
Sciences

Qadir Timerghazin, Ph.D.  
Concordia University-Montreal  
Assistant Professor of Chemistry

Theresa M. Tobin, Ph.D.  
University of Colorado at Boulder  
Assistant Professor of Philosophy



Peter J. Tonellato, Ph.D.  
University of Arizona  
Research Associate Professor of Mathematics,  
Statistics and Computer Science

Lucas Torres, Ph.D.  
Purdue University  
Assistant Professor of Psychology

Peter G. Toumanoff, Ph.D.  
University of Washington  
Associate Professor of Economics

Chieu Tran, Ph.D.  
Texas A&M University  
Habermann Distinguished Professor of Chemistry  
Sabbatical: 2011-12

Franco V. Trivigno, Ph.D.  
Boston University  
Assistant Professor of Philosophy

David B. Twetten, Ph.D.  
University of Toronto  
Associate Professor of Philosophy

Brian R. Unsworth, Ph.D.  
University College-London  
Professor Emeritus of Biological Sciences

Mary P. Utzerath, Ph.D.  
Marquette University  
Adjunct Instructor of Mathematics, Statistics and  
Computer Science

Amy Vaughn Van Hecke, Ph.D.  
University of Miami  
Assistant Professor of Psychology

Jennifer Vanderheyden, Ph.D.  
University of Washington  
Visiting Assistant Professor of French

Pol G. Vandeveld, Ph.D.  
Universite de Louvain-Belgium  
Professor of Philosophy

Capt William D. VanFleet, USA, M.B.A.  
Colorado Tech University  
Assistant Professor of Military Science and  
Leadership

Gabriela Vecchio, M.A.  
Boston College  
Adjunct Instructor of Spanish

Barry L. Velleman, Ph.D.  
University of Wisconsin-Madison  
Professor of Spanish

Melissa Vigil, M.S.  
DePaul University  
Laboratory Supervisor, Physics

Sarah Wadsworth, Ph.D.  
University of Minnesota-Twin Cities  
Associate Professor of English

Capt. Brandon Walsh, USAF, B.S.  
University of Maryland  
Associate Professor of Aerospace Studies

Miao Grace Wang, Ph.D.  
University of Oregon  
Associate Professor of Economics

Gail L. Waring, Ph.D.  
University of Oregon  
Professor of Biological Sciences  
Sabbatical: 2011-12

Lawrence Watson, Ph.D.  
University of Utah  
Visiting Professor of English

Ralph A. Weber, Ph.D.  
University of Notre Dame  
Professor Emeritus of History

Michael Wert, Ph.D.  
University of California-Irvine  
Assistant Professor of History

Darren L. Wheelock, Ph.D.  
University of Minnesota-Twin Cities  
Assistant Professor of Criminology and Law  
Studies

Amber Wichowsky, Ph.D.  
University of Wisconsin-Madison  
Assistant Professor of Political Science

Michael J. Wierzbicki, Ph.D.  
Indiana University  
Associate Professor of Psychology

Charles A. Wilkie, Ph.D.  
Wayne State University  
Professor Emeritus of Chemistry

Marcia L. Williams, Ph.D.  
University of Minnesota-Twin Cities  
Adjunct Assistant Professor of Sociology

Brian J. Williams, Ph.D.  
University of Wisconsin-Madison  
Visiting Assistant Professor of English

Monica Witkowski, Ph.D.  
Marquette University  
Visiting Assistant Professor of History

Christopher Wolfe, Ph.D.  
Boston College  
Professor Emeritus of Political Science

Susan K. Wood, SCL, Ph.D.  
Marquette University  
Professor of Theology  
Chair, Theology

Dong Wook Wook Kim, Ph.D.  
University of Wisconsin-Madison  
Assistant Professor of Political Science

Michael J. Wreen, Ph.D.  
Temple University  
Professor of Philosophy

Markus Wriedt, Dr. Theol., Dr. Habil.  
University of Hamburg  
Visiting Professor of Theology

Olga Yakusheva, Ph.D.  
University of Illinois at Urbana-Champaign  
Assistant Professor of Economics

Pinfen Yang, Ph.D.  
Case Western Reserve University  
Associate Professor of Biological Sciences

Deqi Yi, Ph.D.  
Beijing Institute of Technology  
Postdoctoral Fellow in Chemistry

Chae S. Yi, Ph.D.  
University of Wisconsin-Madison  
Professor of Chemistry

McGee W. Young, Ph.D.  
Syracuse University  
Assistant Professor of Political Science

Wanda Zemler-Cizewski, Ph.D.  
University of Toronto  
Associate Professor of Theology

Rev. Michael J. Zeps, S.J., Ph.D.  
Stanford University  
Associate Professor of History

Richard G. Zevitz, D.Crim., J.D.  
University of California-Berkeley  
Associate Professor of Criminology and Law  
Studies

Jing Zhai, M.A.  
University of Wisconsin-Milwaukee  
Adjunct Instructor of Chinese

Ronald E. Zupko, Ph.D.  
University of Wisconsin-Madison  
Professor Emeritus of History

Amelia Zurcher, Ph.D.  
Princeton University  
Associate Professor of English  
Coordinator, Women's and Gender Studies  
Program

## College of Business Administration

### Administrators

Linda M. Salchenberger, Ph.D.  
Kames H. Keyes Dean, College of Business  
Administration  
Professor of Management

Andrew D. Hunt  
Assistant Director, Real Estate Programs

Timothy J. Keane, M.Ed.  
Entrepreneur-in-Residence  
Director, Golden Angels Network  
Director, Kohler Center for Entrepreneurship

David S. Krause, Ph.D.  
Director of the Applied Investment Management  
Program  
Assistant Professor of Finance

Tina M. Quely, M.A.  
Associate Director, Kohler Center for  
Entrepreneurship

Karen A. Rinehart, M.Ed.  
Assistant Director, Business Career Center

Peter G. Toumanoff, Ph.D.  
Co-director, Center for Global and Economic  
Studies  
Associate Professor of Economics

James M. McGibany, Ph.D.  
Executive Associate Dean  
Associate Professor of Economics

Jeanne M. Simmons, Ph.D.  
Associate Dean, Graduate School of Management  
Assistant Professor of Marketing

Joseph M. Terrian, M.B.A.  
Assistant Dean, Undergraduate Programs  
Instructor of Marketing

Joseph P. Daniels, Ph.D.  
Co-director, Center for Global and Economic  
Studies  
Professor of Economics

Sally A. Doyle  
Director, Academic Business Affairs

Eileen Ennis, S.S.N.D., M.S.  
Adviser, Undergraduate Programs  
Adjunct Instructor of Management

Douglas A. Fisher, D.B.A.  
Director, Center for Supply Chain Management  
Assistant Professor of Management

Jamshid C. Hosseini, Ph.D.  
Director, International Business Studies  
Associate Professor of Management

## Faculty and Department Administrators

Monica Adya, Ph.D.  
Case Western Reserve University  
Associate Professor of Management

Michael D. Akers, Ph.D.  
University of Mississippi  
Charles T. Horngren Professor of Accounting  
Chair, Accounting

Syed H. Akhter, Ph.D.  
University of Oklahoma-Norman  
Professor of Marketing

J. Craig Andrews, Ph.D.  
University of South Carolina  
Professor of Marketing  
Charles H. Kellstadt Chair, Marketing

Matteo P. Arena, Ph.D.  
University of Missouri-Columbia  
Assistant Professor of Finance

Connie L. Bauer, Ph.D.  
Michigan State University  
Associate Professor of Marketing

Thomas A. Bausch, D.B.A.  
Indiana University  
Dean Emeritus

Marcus V. Braga-Alves, Ph.D.  
University of Pittsburgh  
Assistant Professor of Finance

Charles H. Breeden, Ph.D.  
Virginia Polytechnic Institute  
Associate Professor of Economics

Ralph E. Brownlee, D.B.A.  
Indiana University  
Professor Emeritus of Marketing

Brian C. Brush, Ph.D.  
University of North Carolina-Chapel Hill  
Professor of Economics

Abdur R. Chowdhury, Ph.D.  
University of Kentucky  
Professor of Economics  
Chair, Economics

David E. Clark, Ph.D.  
Binghamton University  
Professor of Economics

Robert D. Collins, M.S.  
Marquette University  
Adjunct Assistant Professor of Management

George F. Corliss, Ph.D.  
Michigan State University  
Professor of Management  
Professor of Electrical and Computer Engineering

Mark Cotteleer, D.B.A.  
Harvard University  
Associate Professor of Management

John L. Cotton, Ph.D.  
University of Iowa  
Professor of Management

Steven Crane, Ph.D.  
University of Colorado at Boulder  
Associate Professor of Economics

Joseph P. Daniels, Ph.D.  
Indiana University  
Professor of Economics  
Co-director, Center for Global and Economic  
Studies

John B. Davis, Ph.D.  
Michigan State University  
Professor of Economics

Michael P. Dole, M.S., C.P.A., C.F.P.  
University of Wisconsin-Milwaukee  
Adjunct Assistant Professor of Accounting

Lloyd D. Doney, Ph.D.  
Louisiana State University  
Professor Emeritus of Accounting

Srinivas Durvasula, Ph.D.  
University of South Carolina  
Professor of Marketing

Eileen Ennis, S.S.N.D., M.S.  
Marquette University  
Adjunct Instructor of Management  
Adviser, Undergraduate Programs

Mark Eppli, Ph.D.  
University of Wisconsin-Madison  
Professor of Finance  
Robert B. Bell, Sr. Chair, Real Estate

Douglas A. Fisher, D.B.A.  
Indiana University  
Assistant Professor of Management  
Director, Center for Supply Chain Management

Dennis E. Garrett, Ph.D.  
University of Illinois at Urbana-Champaign  
Associate Professor of Marketing  
Sabbatical: Fall 2011

Don Giacomino, D.B.A.  
University of Kentucky  
Professor of Accounting  
Donald Flynn Chair, Accounting

Jodi Gissel, Ph.D.  
University of Wisconsin-Madison  
Assistant Professor of Accounting

Cindy J. Gruber, M.B.A.  
University of Wisconsin-Milwaukee  
Adjunct Instructor of Accounting

Jamshid C. Hosseini, Ph.D.  
Portland State University  
Associate Professor of Management  
Director, International Business Studies

William J. Hunter, Ph.D.  
Virginia Polytechnic University  
Associate Professor of Finance  
Director, National Institute for Consumer Credit Management

Edward J. Inderrieden, D.B.A.  
University of Colorado at Boulder  
Associate Professor of Management

Kate M. Kaiser, Ph.D.  
University of Pittsburgh  
Associate Professor of Management

Timothy J. Keane, M.Ed.  
Seattle University  
Entrepreneur-in-Residence  
Director, Golden Angels Network  
Director, Kohler Center for Entrepreneurship

Timothy J. Keaveny, Ph.D.  
University of Minnesota-Twin Cities  
Professor of Management

June-Young Kim, Ph.D.  
University of Wisconsin-Madison  
Assistant Professor of Management

David King, Ph.D.  
Indiana University  
Associate Professor of Management

Heather H. Kohls, Ph.D.  
University of Wisconsin-Milwaukee  
Adjunct Associate Professor of Economics

David S. Krause, Ph.D.  
North Central University  
Adjunct Assistant Professor of Finance  
Director, Applied Investment Management Program

Barbara L. Kren, M.S.  
University of Wisconsin-Milwaukee  
Adjunct Instructor of Accounting

Manoj Kulchania, Ph.D.  
University of Pittsburgh  
Assistant Professor of Finance

George W. Kutner, Ph.D.  
Northwestern University  
Associate Professor of Finance

Gene R. Laczniak, Ph.D.  
University of Wisconsin-Madison  
Professor of Marketing  
Chair, Marketing

Felissa K. Lee, Ph.D.  
University of Missouri-Columbia  
Associate Professor of Management

Noreen E. Lephardt, Ph.D.  
University of Tennessee-Knoxville  
Adjunct Associate Professor of Economics

Qianhua Ling, Ph.D.  
Oklahoma State University  
Assistant Professor of Accounting

Steven J. Lysonski, Ph.D.  
Syracuse University  
Professor of Marketing

Cheryl L. Maranto, Ph.D.  
Michigan State University  
Associate Professor  
Chair, Management

James M. McGibany, Ph.D.  
Michigan State University  
Associate Professor of Economics  
Executive Associate Dean

Felicia M. Miller, Ph.D.  
University of Cincinnati  
Assistant Professor of Marketing

Gregory J. Naples, J.D.  
University of Illinois at Urbana-Champaign  
Associate Professor of Accounting

Farrokh Nourzad, Ph.D.  
University of Kansas  
Professor of Economics

Bonnie S. O'Neill, Ph.D.  
University of Wisconsin-Milwaukee  
Associate Professor of Management

Daniel M. Ortego, MSM  
Director, Business Career Center

Terence T. Ow, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Management

Sarah Peck, Ph.D.  
University of Rochester  
Associate Professor of Finance  
Chair, Finance

Anthony N. Pennington-Cross, Ph.D.  
The George Washington University  
Associate Professor of Finance

Frank R. Probst, Ph.D.  
University of Florida  
Professor Emeritus of Accounting

Steven J. Rau, M.B.A.  
Marquette University  
Adjunct Instructor of Management

Kathleen A. Rehbein, Ph.D.  
Washington University at St. Louis  
Associate Professor of Management

Scott Rex, M.B.A.  
Vanderbilt University  
Instructor of Marketing

Richard K. Robinson, Ph.D.  
Northwestern University  
Associate Professor of Marketing  
Sabbatical: Fall 2011

Linda M. Salchenberger, Ph.D.  
Northwestern University  
James H. Keyes Dean, College of Business  
Administration  
Professor of Management

David L. Schrock, D.B.A.  
Indiana University  
Dean Emeritus  
Professor Emeritus of Transportation and Logistics

Mark H. Schwiesow, M.B.A.  
University of Wisconsin-Milwaukee  
Adjunct Instructor of Management

Jeanne M. Simmons, Ph.D.  
Marquette University  
Assistant Professor of Marketing  
Associate Dean, Graduate School of Management

W. Gene Smiley, Ph.D.  
University of Iowa  
Professor Emeritus of Economics

Bharatendu Srivastava, Ph.D.  
Washington State University  
Associate Professor  
Assistant Chair, Management

W. Alex Stewart, Ph.D.  
York University  
Associate Professor of Management  
Coleman Chair, Entrepreneurship

Ikseon Suh, Ph.D.  
Southern Illinois University  
Assistant Professor of Accounting

Siddhartha S. Syam, Ph.D.  
Texas A&M  
University  
Associate Professor of Management

Joseph M. Terrian, M.B.A.  
Marquette University  
Instructor of Marketing  
Assistant Dean, Undergraduate Programs

Peter G. Toumanoff, Ph.D.  
University of Washington  
Associate Professor of Economics  
Co-director, Center for Global and Economic  
Studies

James P. Trebbly, D.B.A.  
University of Kentucky  
Associate Professor of Accounting

Xiang Sean Wan, Ph.D.  
University of Maryland  
Assistant Professor of Management

Miao Grace Wang, Ph.D.  
University of Oregon  
Associate Professor of Economics  
Sabbatical: Spring 2012

Charles Waterson, ABD  
University of Nebraska-Lincoln  
Instructor of Management

Jennica Webster, Ph.D.  
Central Michigan University  
Assistant Professor of Management

Robert B. Yahr, Ph.D.  
University of Nebraska-Lincoln  
Associate Professor of Accounting

Olga Yakusheva, Ph.D.  
University of Illinois at Urbana-Champaign  
Assistant Professor of Economics

## **Diederich College of Communication**

### **Administrators**

Lori Bergen, Ph.D.  
Dean, Diederich College of Communication  
William R. Burleigh and E.W. Burleigh Professor of Journalism

Joyce M. Wolburg, Ph.D.  
Associate Dean  
Professor of Advertising and Public Relations

Erik F. Ugland, J.D., Ph.D.  
Associate Dean, Graduate Studies  
Research and Associate Professor of Broadcast and Electronic Communication

Chioma Ugochukwu, Ph.D.  
Assistant Dean, Undergraduate Student Services

### **Faculty and Department Administrators**

James W. Arnold, M.A.  
Stanford University  
Professor Emeritus of Journalism

Clair Badaracco, Ph.D.  
Rutgers University  
Professor Emerita of Advertising and Public Relations

Bill L. Baxter, M.A.  
University of Iowa  
Associate Professor Emeritus of Advertising and Public Relations

Kati Tusinski Berg, Ph.D.  
University of Oregon  
Assistant Professor of Advertising and Public Relations

Lori Bergen, Ph.D.  
Indiana University  
Dean, Diederich College of Communication  
William R. Burleigh and E.W. Scripps Professor of Journalism

Danielle Beverly, M.F.A.  
Columbia College, Chicago  
Visiting Professional-in- Residence of Broadcast and Electronic Communication

Bonnie S. Brennen, Ph.D.  
University of Iowa  
Lucius W. Nieman Professor of Journalism

Stephen R. Byers, Ph.D.  
University of Wisconsin-Milwaukee  
Assistant Professor of Journalism  
Adviser, Student Publications

Sumana Chattopadhyay, Ph.D.  
University of Missouri-Columbia  
Assistant Professor of Broadcast and Electronic Communication

John H. Crowley, M.A.  
Marquette University  
Associate Professor Emeritus of Advertising and Public Relations

Scott D'Urso, Ph.D.  
University of Texas-Austin  
Assistant Professor of Communication Studies

Daradirek "GEE" Ekachai, Ph.D.  
Southern Illinois University-Carbondale  
Associate Professor of Advertising and Public Relations  
Chair, Strategic Communication

Sarah Bonewits Feldner, Ph.D.  
Purdue University  
Associate Professor of Communication Studies

Jeremy Fyke, Ph.D.  
Purdue University  
Assistant Professor of Communication Studies

Ana C. Garner, Ph.D.  
University of Iowa  
Associate Professor of Journalism

Steven R. Goldzwig, Ph.D.  
Purdue University  
Professor of Communication Studies  
Chair, Communication Studies

Robert J. Griffin, Ph.D.  
University of Wisconsin-Madison  
Professor of Journalism

Jean Grow, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Advertising and Public  
Relations  
Coordinator, MIAD Program

Michael J. Havice, Ed.D.  
Drake University  
Associate Professor of Broadcast and Electronic  
Communication

Maya Held, M.F.A.  
University of New Orleans  
Instructor of Broadcast and Electronic  
Communication

Stephen Hudson-Mairet, M.F.A.  
University of Kansas  
Artistic Assistant Professor  
Chair, Performing and Media Arts Department

Thomas Isaacson, M.A.  
Michigan State University  
Instructor of Advertising and Public Relations

Debra S. Krajec, M.F.A.  
Texas Christian University  
Artistic Associate Professor of Performing Arts

Richard H. Leonard, A.B.  
University of Wisconsin-Madison  
Lucius W. Nieman Professor of Journalism  
Emeritus

Chester R. Loeffler-Bell, M.F.A.  
University of South Carolina  
Artistic Assistant Professor of Performing Arts

Herbert Lowe, B.A.  
Marquette University  
Professional-in-Residence of Journalism

Linda E. Menck, M.A.  
Marquette University  
Professional-in-Residence of Advertising and  
Public Relations

Gary S. Meyer, Ph.D.  
Michigan State University  
Professor of Communication Studies  
Vice Provost for Undergraduate Programs and  
Teaching

Pamela Hill Nettleton, Ph.D.  
University of Minnesota-Twin Cities  
Assistant Professor of Journalism

John J. Pauly, Ph.D.  
University of Illinois  
Professor of Journalism  
Provost

Connie Petersen, M.F.A.  
Southern Illinois University-Carbondale  
Artistic Assistant Professor of Performing Arts

James V. Pokrywczynski, Ph.D.  
University of Georgia-Athens  
Associate Professor of Advertising and Public  
Relations

Michael J. Price, M.A.  
Marquette University  
Associate Professor Emeritus of Performing Arts

Phylis Ravel, M.F.A.  
University of California-Los Angeles  
Artistic Associate Professor of Performing Arts

James F. Scotton, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Journalism

Robert M. Shuter, Ph.D.  
Northwestern University  
Professor of Communication Studies

Karen L. Slattery, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Broadcast and Electronic  
Communication  
Chair, Journalism and Media Studies

Lawrence C. Soley, Ph.D.  
Michigan State University  
Gretchen and Cyril Colnik Professor of  
Communication and Journalism

William J. Thorn, Ph.D.  
University of Minnesota-Twin Cities  
Associate Professor  
Chair, Journalism

Lynn H. Turner, Ph.D.  
Northwestern University  
Professor of Communication Studies

Erik F. Ugland, J.D., Ph.D.  
University of Minnesota-Twin Cities  
Research and Associate Professor of Broadcast  
and Electronic Communication  
Associate Dean, Graduate Studies and Research

Barbara F. Volbrecht, M.A.  
Cardinal Stritch University  
Adjunct Instructor of Broadcast and Electronic  
Communication  
Adviser, Broadcast Media

Tracey L. Weigel, M.A.  
University of Wisconsin-Milwaukee  
Instructor of Communication Studies

Joyce M. Wolburg, Ph.D.  
University of Tennessee-Knoxville  
Professor of Advertising and Public Relations  
Associate Dean

## College of Education

### Administrators

William Henk, Ed.D.  
Dean, College of Education  
Professor of Education

Tina McNamara, M.A.  
Director, Undergraduate Advising

Mark Simonson, M.B.A.  
Business Manager

Susan Stang, M.S.E.  
Director, Field Placements and Licensure

Joan L. Whipp, Ph.D.  
Director, Teacher Education  
Associate Professor of Education

### Faculty and Department Administrators

John J. Augenstein, Ph.D.  
Kent State University  
Associate Professor Emeritus of Education

Rebecca Bardwell, Ph.D.  
University of Iowa  
Associate Professor of Education

Jill Birren, Ph.D.  
Washington University, St. Louis  
Assistant Professor of Education

Margaret L. (Peggy) Bloom, Ph.D.  
Arizona State University  
Professor of Education

Alan Burkard, Ph.D.  
Fordham University  
Associate Professor of Education  
Chair, Counselor Education and Counseling Psychology

Mary Carlson, M.S.  
University of Wisconsin-Milwaukee  
Adjunct Lecturer

Sharon Chubbuck Ph.D.  
University of Illinois at Urbana-Champaign  
Associate Professor of Education  
Director, Graduate Studies

Kathleen F. Clark Ph.D.  
University of Minnesota-Twin Cities  
Associate Professor of Education  
Director, Ralph C. Hartman Literacy and Learning Center

Ellen Eckman, Ph.D.  
University of Wisconsin-Milwaukee  
Associate Professor of Education  
Chair, Educational Policy and Leadership

Lisa Edwards, Ph.D.  
University of Kansas  
Associate Professor of Education

Karen Evans, Ph.D.  
University of Arizona  
Adjunct Associate Professor  
Assessment Coordinator

Robert A. Fox, Ph.D.  
University of Wisconsin-Madison  
Professor of Education  
Director, Parenting Center

Howard L. Fuller, Ph.D.  
Marquette University  
Distinguished Professor of Education

William Henk, Ed.D.  
West Virginia University  
Dean, College of Education  
Professor of Education

John M. Ivanoff, Ed.D.  
University of Nebraska  
Professor Emeritus of Education

Jody Jessup-Anger, Ph.D.  
Michigan State University  
Assistant Professor of Education

Joan L. Joan L., Ph.D.  
University of Wisconsin-Milwaukee  
Associate Professor of Education and Director, Teacher Education

Sarah Knox, Ph.D.  
University of Maryland  
Professor of Education

Rev. Jeffrey T. LaBelle, S.J., Ed.D.  
University of San Francisco  
Assistant Professor of Education

Lauren Leslie, Ph.D.  
University of Iowa  
Professor Emeritus of Education



Francesca Lopez, Ph.D.  
University of Arizona  
Assistant Professor of Education

Robert Lowe, Ph.D.  
Stanford University  
Professor of Education

Timothy P. Melchert, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Education  
Assistant Vice Provost, Graduate School

Lee Za Ong, Ph.D.  
University of Wisconsin-Madison  
Assistant Professor of Education

William T. Pink, Ph.D.  
University of Oregon  
Professor of Education

Martin K. Scanlon, Ph.D.  
University of Wisconsin-Madison  
Assistant Professor of Education

Kevin A. Take, Ph.D.  
University of Florida  
Assistant Professor of Education

Albert G. Thompson, Ed.D.  
University of California-Berkeley  
Professor Emeritus of Education

Rev. Andrew Thon, S.J., Ph.D.  
University of Wisconsin-Madison  
Clinical Associate Professor of Higher Education

Leigh van den Kieboom, Ph.D.  
Marquette University  
Assistant Professor of Education

Doris Walker-Dalhouse, Ph.D.  
The Ohio State University  
Associate Professor of Education

## College of Engineering

### Administrators

Robert Bishop, Ph.D.  
Opus Dean, College of Engineering  
Professor of Electrical and Computer Engineering

Michael S. Switzenbaum, Ph.D.  
Executive Associate Dean  
Professor of Civil and Environmental Engineering

Jon K. Jensen, Ph.D.  
Associate Dean, Enrollment Management  
Associate Professor of Mechanical Engineering

Susan J. Michaelson, M.A.  
Assistant Dean  
Director, Cooperative Education

J. Christopher Perez, M.S., M.B.A.  
Assistant Dean, Academic Affairs

Philip Rawson, B.A.  
Business Manager

### Faculty and Department Administrators

A. Arkadan Adbul-Rahman, Ph.D., P.E.  
Clarkson University  
Research Professor of Electrical and Computer Engineering

Carolyn Albert, Ph.D.  
University of British Columbia  
ARRT Post Doctoral Fellow in Biomedical Engineering

Said H. Audi, Ph.D.  
Marquette University  
Associate Professor of Biomedical Engineering

Scott A. Beardsley, Ph.D.  
Boston University  
Assistant Professor of Biomedical Engineering

Florian Bender, Ph.D.  
University of Heidelberg- Germany  
Research Assistant Professor Electrical and Computer Engineering

Robert Bishop, Ph.D.  
Rice University  
Opus Dean, College of Engineering  
Professor of Electrical and Computer Engineering

Robert N. Blumenthal, Ph.D., P.E.  
Northwestern University  
Professor Emeritus of Mechanical Engineering

John Borg, Ph.D., P.E.  
University of Massachusetts  
Associate Professor of Mechanical Engineering  
Sabbatical: 2011-12

Anthony Bowman, Ph.D.  
Marquette University  
Research Assistant Professor of Mechanical Engineering

Robert F. Brebrick, Ph.D.  
The Catholic University of America  
Professor Emeritus of Mechanical Engineering

William E. Brower, Jr., Ph.D., P.E.  
Massachusetts Institute of Technology  
Professor Emeritus of Mechanical Engineering

Ronald H. Brown, Ph.D.  
University of Illinois At Urbana-Champaign  
Associate Professor of Electrical and Computer Engineering  
Director, GASDAY Center

Vikram Cariapa, Ph.D., P.E.  
University of Arkansas  
Associate Professor of Mechanical Engineering

George F. Corliss, Ph.D.  
Michigan State University  
Professor of Electrical and Computer Engineering

Kevin C. Craig, Ph.D.  
Columbia University  
Professor of Mechanical Engineering  
Greenheck Chair, Engineering Design

Clifford J. Crandall, Ph.D., P.E.  
Illinois Institute of Technology  
Associate Professor of Civil and Environmental Engineering

James A. Crovetti, Ph.D.  
University of Illinois at Urbana-Champaign  
Associate Professor of Civil and Environmental Engineering  
Director, Transportation Research Center

Nabeel A. O. Demerdash, Ph.D.  
University of Pittsburgh  
Professor of Electrical and Computer Engineering

Joseph P. Domblesky, Ph.D., P.E.  
The Ohio State University  
Associate Professor of Mechanical Engineering

Alex Drakopoulos, Ph.D.  
Michigan State University  
Associate Professor of Civil and Environmental Engineering

Laura Ellwein, Ph.D.  
North Carolina State University  
Postdoctoral Fellow in Biomedical Engineering

Keith F. Faherty, Ph.D., P.E.  
University of Iowa  
Professor Emeritus of Civil and Environmental Engineering

Mark O. Federle, Ph.D.  
University of Michigan  
Professor of Civil and Environmental Engineering  
Associate Chair, Civil and Environmental Engineering  
McShane Chair, Construction Engineering and Management

Xin Feng, D.Sc.  
Washington University at St. Louis  
Associate Professor of Electrical and Computer Engineering

Christopher M. Foley, Ph.D., P.E.  
Marquette University  
Professor of Civil and Environmental Engineering  
Chair, Civil and Environmental Engineering

Raymond A. Fournelle, Ph.D., P.E.  
University of Missouri-Rolla  
Professor of Mechanical Engineering  
Associate Chair, Mechanical Engineering  
Director, Undergraduate Studies in Mechanical Engineering

Richard A. Gaggioli, Ph.D., P.E.  
University of Wisconsin-Madison  
Professor Emeritus of Mechanical Engineering

Tal Gilat-Schmidt, Ph.D.  
Stanford University  
Assistant Professor of Biomedical Engineering

Jay R. Goldberg, Ph.D., P.E.  
Northwestern University  
Associate Professor of Biomedical Engineering  
Director, Health Care Technologies Management Program

S. Scott Goldsborough, Ph.D.  
Colorado State University  
Adjunct Assistant Professor of Mechanical Engineering

Gerald F. Harris, Ph.D., P.E.  
Marquette University  
Professor of Biomedical and Mechanical Engineering  
Director, Orthopedic Rehabilitation Engineering Center

James A. Heinen, Ph.D., P.E.  
Marquette University  
Professor Emeritus of Electrical and Computer Engineering

Stephen M. Heinrich, Ph.D.  
University of Illinois at Urbana-Champaign  
Professor of Civil and Environmental Engineering  
Professor of Electrical and Computer Engineering  
Professor of Mechanical Engineering  
Director, Graduate Studies in Civil and Environmental Engineering

Jeffrey L. Hock, Ph.D.,P.E.  
University of Wisconsin-Milwaukee  
Professor Emeritus of Electrical and Computer Engineering

Shuguang Huang, Ph.D.  
Marquette University  
Research Associate Professor of Mechanical Engineering

Thomas K. Ishii, Ph.D.  
University of Wisconsin-Madison  
Professor Emeritus of Electrical and Computer Engineering

Francis X. Jacoby, M.S.E.E.,P.E.  
Marquette University  
Adjunct Associate Professor  
Associate Chair, Electrical and Computer Engineering  
Program Coordinator, Electrical Engineering

Stanley V. Jaskolski, Ph.D.  
Marquette University  
Dean Emeritus

Jon K. Jensen, Ph.D.  
Marquette University  
Associate Professor of Mechanical Engineering  
Associate Dean, Enrollment Management

Dean C. Jeutter, Ph.D.,P.E.  
Drexel University  
Professor of Biomedical Engineering  
Professor of Electrical and Computer Engineering

Michael T. Johnson, Ph.D.  
Purdue University  
Associate Professor in Electrical and Computer Engineering  
Director, Graduate Studies in Electrical and Computer Engineering

Michelle Johnson, Ph.D.  
Stanford University  
Research Assistant Professor of Biomedical Engineering

Shrinivas G. Joshi, Ph.D.  
University of California-Berkeley  
Professor of Electrical and Computer Engineering

Fabien Josse, Ph.D.  
University of Maine at Orono  
Professor of Electrical and Computer Engineering  
Director, Center for Sensor Technology

Saeed Karshenas, Ph.D.,P.E.  
University of Illinois at Urbana-Champaign  
Professor of Civil and Environmental Engineering

Kyuil Kim, Ph.D.,P.E.  
University of Wisconsin-Madison  
Professor Mechanical Engineering  
Chair, Mechanical Engineering

John Koch, Ph.D.  
Stanford University  
Assistant Professor of Mechanical Engineering

John F. LaDisa, Jr.,Ph.D.  
Marquette University  
Assistant Professor of Biomedical Engineering

Brigid J. Lagerman, M.S.  
Cardinal Stritch University  
Associate Chair, Biomedical Engineering

Chung Hoon Lee, Ph.D.  
University of Wisconsin-Madison  
Assistant Professor of Electrical and Computer and Mechanical Engineering

Laura Lindemann, B.S.  
Marquette University  
Assistant Chair, Biomedical Engineering

Richard W. Marklin, Ph.D.  
The Ohio State University  
Professor of Mechanical Engineering

Charles S. Melching, Ph.D.,P.E.  
University of Illinois At Urbana-Champaign  
Professor of Civil and Environmental Engineering

Jonathan A. Meus, M.S.  
Marquette University  
Adjunct Assistant Professor of Civil and Environmental Engineering

Mark L. Nagurka, Ph.D.,P.E.  
Massachusetts Institute of Technology  
Associate Professor of Mechanical Engineering

Nicholas J. Nigro, Ph.D.  
Iowa State University  
Professor Emeritus of Mechanical Engineering

Vladimir Novotny, Ph.D.  
Vanderbilt University  
Professor Emeritus of Civil and Environmental Engineering

Lars E. Olson, Ph.D.  
Vanderbilt University  
Associate Professor of Biomedical Engineering

Hyunjae Park, Ph.D.  
University of California-Los Angeles  
Research Professor for Mechanical Engineering  
Director, Thermofluid Science and Energy  
Research Center

Mark Polczynski, Ph.D.  
Marquette University  
Adjunct Associate Professor

Richard J. Povinelli, Ph.D.  
Marquette University  
Associate Professor of Electrical and Computer  
Engineering

James A. Rice, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Mechanical Engineering  
Director, Graduate Studies in Mechanical  
Engineering

James E. Richie, Ph.D.  
University of Pennsylvania  
Associate Professor of Electrical and Computer  
Engineering

Susan A. Riedel, S.M.,P.E.  
Massachusetts Institute of Technology  
Associate Professor of Electrical and Computer  
Engineering  
Program Coordinator, Computer Engineering

Kristina M. Ropella, Ph.D.  
Northwestern University  
Professor Biomedical Engineering  
Chair, Biomedical Engineering

Robert A. Scheidt, Ph.D.  
Northwestern University  
Associate Professor of Biomedical Engineering  
Associate Professor of Electrical and Computer  
Engineering

Joseph M. Schimmels, Ph.D.  
Northwestern University  
Professor of Mechanical Engineering

Brian D. Schmit, Ph.D.  
Case Western Reserve University  
Professor of Biomedical Engineering

Susan C. Schneider, Ph.D.  
University of Wisconsin-Milwaukee  
Associate Professor Electrical and Computer  
Engineering  
Director, Undergraduate Studies in Electrical and  
Computer Engineering  
Sabbatical: 2011-12

Martin A. Seitz, Ph.D.  
Northwestern University  
Professor Emeritus of Electrical and Computer  
Engineering  
Professor Emeritus of Mechanical Engineering  
Professor Emeritus of Biomedical Engineering

Barbara M. Silver-Thorn, Ph.D.  
Northwestern University  
Associate Professor of Biomedical Engineering  
Associate Professor of Mechanical Engineering

Robert J. Stango, Ph.D.,P.E.  
University of Illinois at Urbana-Champaign  
Professor of Mechanical Engineering

Michael S. Switzenbaum, Ph.D.  
Cornell University  
Professor of Civil and Environmental Engineering  
Executive Associate Dean

Sriramulu Vinnakota, Ph.D.,P.E.  
Swiss Federal Institute- Lausanne  
Professor of Civil and Environmental Engineering

Phillip Voglewede, Ph.D.  
Georgia Institute of Technology  
Assistant Professor of Mechanical Engineering

Baolin Wan, Ph.D.  
University of South Carolina  
Associate Professor of Civil and Environmental  
Engineering  
Sabbatical: 2011-12

Robert C. Weber, Ph.D.  
University of Missouri-Rolla  
Adjunct Associate Professor of Mechanical  
Engineering

Thomas Wenzel, Ph.D.,P.E.  
Northwestern University  
Associate Professor Emeritus of Civil and  
Environmental Engineering

G. E. Otto Widera, Ph.D.  
University of Wisconsin-Madison  
Professor of Mechanical Engineering

John M. Winters, Ph.D.  
University of California-Berkeley  
Professor of Biomedical Engineering

Edwin E. Yaz, Ph.D.,P.E.  
Bosphorus University-Istanbul  
Professor Electrical and Computer Engineering  
Chair, Electrical and Computer Engineering

Daniel H. Zitomer, Ph.D.,P.E.  
Vanderbilt University  
Professor of Civil and Environmental Engineering  
Director, Water Quality Center

Alphonse E. Zononi, Ph.D.,P.E.  
University of Minnesota-Twin Cities  
Professor Emeritus of Civil and Environmental  
Engineering

## College of Health Sciences

### Administrators

William E. Cullinan, Ph.D.  
Dean, College of Health Sciences  
Associate Professor of Biomedical Sciences

Kim L. Halula, Ph.D.  
Associate Dean

Michelle G. Schuh, P.T.,M.S.  
Assistant Dean

### Faculty and Department Administrators

Emilie J. Aubert, P.T.,D.P.T.,M.A.  
Marquette University  
Adjunct Associate Professor of Physical Therapy

David A. Baker, Ph.D.  
Arizona State University  
Associate Professor  
Associate Chair, Biomedical Sciences

Jeremiah Barrett, M.P.T  
Marquette University  
Clinical Assistant Professor of Physician Assistant  
Studies

William A. Bell, D.D.S.  
Washington University at St. Louis  
Associate Professor of Biomedical Sciences

Marie Hoeger Bement, P.T.,Ph.D.  
University of Iowa  
Assistant Professor of Physical Therapy

Joseph Berman, P.T.,M.S.  
University of Indianapolis  
Adjunct Assistant Professor of Physical Therapy

S.Sue Berman, M.A.,CCC-SLP  
Northwestern University  
Clinical Instructor of Speech Pathology and  
Audiology

Jeffrey Berry, Ph.D.,CCC-SLP  
University of Wisconsin-Madison  
Assistant Professor of Speech Pathology and  
Audiology

Subhash C. Bhatnagar, Ph.D.,CCC-SLP  
University of Rochester  
Associate Professor of Speech Pathology and  
Audiology

Murray Blackmore, Ph.D.  
University of Minnesota  
Assistant Professor of Biomedical Sciences

Cathy Bril, PA-C  
Marquette University  
Clinical Assistant Professor of Physician Assistant  
Studies

Ann Brophy, B.S.  
Marquette University  
Adjunct Assistant Professor of Biomedical  
Sciences

Katherine Brueck, M.S.,CCC-SLP  
Marquette University  
Clinical Instructor of Speech Pathology and  
Audiology

Edward W. Carroll, Ph.D.  
Medical College of Wisconsin  
Clinical Assistant Professor of Biomedical  
Sciences

DeAnne Ceelen, PA-C  
University of Wisconsin-Madison  
Co-director, Clinical Education in Physician  
Assistant Studies

Su Jean Choi, Ph.D.  
University of Rochester  
Assistant Professor of Biomedical Sciences

Mary A. Cimrmancic, D.D.S.  
Marquette University  
Adjunct Assistant Professor of Biomedical  
Sciences

Paul J. Coogan, M.D.  
Chicago Medical School  
Associate Clinical Professor of Physician Assistant  
Studies  
Medical Director, Physician Assistant Studies

William E. Cullinan, Ph.D.  
University of Virginia  
Dean, College of Health Sciences  
Associate Professor of Biomedical Sciences

Jeffrey Davis, B.S.  
Chicago Medical School  
Adjunct Assistant Professor of Biomedical Sciences

Bruce E. Dunn, M.D.  
Medical University of South Carolina  
Medical Adviser, Clinical Laboratory Sciences

William P. Ebben, Ph.D.  
Northern Michigan University  
Clinical Assistant Professor of Physical Therapy

Kathleen Erdman, M.S.,CCC-SLP  
University of Wisconsin-Madison  
Clinical Instructor of Speech Pathology and Audiology

Jeanne A. Feldman, B.S.  
Marquette University  
Adjunct Assistant Professor of Biomedical Sciences

Yazmin Figueroa-Guzman, Ph.D.  
Universidad Nacional Autonoma de Mexico  
Postdoctoral Fellow in Biomedical Sciences

Jean Fischer, PA-C  
University of Wisconsin-Madison  
Co-director, Clinical Education in Physician Assistant Studies

Paul Gasser, Ph.D.  
Arizona State University  
Assistant Professor of Biomedical Sciences

Christopher F. Geiser, P.T.,M.A.  
Marquette University  
Clinical Assistant Professor  
Director, Athletic Training Program

Behnam Ghasemzadeh, Ph.D.  
University of Kansas  
Assistant Professor of Biomedical Sciences

Brenda Gorman, Ph.D.,CCC-SLP  
University of Texas-Austin  
Assistant Professor of Speech Pathology and Audiology

Eric Hanson, M.D.  
Medical College of Wisconsin  
Clinical Assistant Professor of Biomedical Sciences

April L. Harkins, Ph.D.,MT (ASCP)  
Medical University of South Carolina  
Assistant Professor of Clinical Laboratory Science

Fang Yao Stephen Hou, Ph.D.,CACLS  
University of Wisconsin-Madison  
Assistant Professor of Clinical Laboratory Science

Sandra K. Hunter, Ph.D.  
University of Sydney- Australia  
Associate Professor of Exercise Science

Allison S. Hyngstrom, M.S.P.T.,Ph.D.  
Northwestern University  
Assistant Professor of Physical Therapy

Virginia Jurken, B.S.  
Marquette University  
Adjunct Assistant Professor of Biomedical Sciences

Kristof Kipp, Ph.D.  
Oregon State University  
Assistant Professor of Exercise Science

Laurieann Klockow, Ph.D.  
University of Wisconsin-Madison  
Clinical Assistant Professor of Biomedical Sciences

Luther C. Kloth, P.T.,M.S.,FAPTA (CWS),FCCWS  
Marquette University  
Professor Emeritus of Physical Therapy

Joshua Knox, PA-C  
University of Wisconsin-Madison  
Clinical Instructor of Physician Assistant Studies

Laurie B. Kontney, P.T.,D.P.T.,M.S.  
University of Wisconsin-Madison  
Clinical Associate Professor  
Director, Clinical Education in Physical Therapy

Edward W. Korabic, Ph.D.,CCC-A  
Syracuse University  
Associate Professor Speech Pathology and Audiology  
Chair, Speech Pathology and Audiology

William L. Kos, Ph.D.  
University of Maryland  
Associate Professor of Biomedical Sciences

Wendy Krueger, M.S.,CCC-SLP  
Marquette University  
Clinical Instructor of Speech Pathology and Audiology

Linda J. Laatsch, Ph.D.,MT (ASCP),SM  
Marquette University  
Associate Professor of Clinical Laboratory Science  
Chair, Clinical Laboratory Science

Cecelia Landin, Ed.D.,MT (ASCP)  
Nova Southeastern  
Clinical Assistant Professor of Clinical Laboratory  
Science

David Leigh, M.Ed.  
University of Arizona  
Clinical Assistant Professor of Exercise Science

Douglas C. Lobner, Ph.D.  
University of Wisconsin-Madison  
Professor of Biomedical Sciences

Patrick Loftis, PA-C,MPAS,RN  
Marquette University  
Clinical Assistant Professor of Physician Assistant  
Studies

Steven H. Long, Ph.D.,CCC-SLP  
Northwestern University  
Associate Professor of Speech and Audiology  
Director, M.S. Program in Speech Pathology and  
Audiology

Khadijah Makky, Ph.D.  
Medical College of Wisconsin  
Research Assistant Professor of Biomedical  
Sciences

John Mantsch, Ph.D.  
Louisiana State University  
Associate Professor of Biomedical Sciences  
Chair, Biomedical Sciences

Miriam R. Moller, M.S.,CCC-SLP  
Marquette University  
Associate Professor Emerita of Speech Pathology  
and Audiology

Maura Jones Moyle, Ph.D.,CCC-SLP  
University of Wisconsin-Madison  
Assistant Professor of Speech Pathology and  
Audiology

Donald A. Neumann P.T., Ph.D.  
University of Iowa  
Professor of Physical Therapy

Alexander Ng, Ph.D.  
University of Wisconsin-Madison  
Associate Professor of Exercise Science

Lawrence G. Pan, P.T.,Ph.D.  
Medical College of Wisconsin  
Professor of Physical Therapy and Exercise  
Physiology  
Chair, Physical Therapy and Exercise Physiology  
Chair, Athletic Training Program  
Director, Health Careers Opportunity Program

Paula E. Papanek, P.T.,ATC,Ph.D.,FASCM,  
University of Florida  
Associate Professor of Physical Therapy and  
Exercise Science  
Director, Exercise Science Program  
Director, Graduate Studies in Clinical and  
Translational Rehabilitation Health Sciences

Danielle Parker, M.P.T.  
Loma Linda University  
Clinical Assistant Professor  
Director, Clinical Education in Physical Therapy

Robert L. Paxton, Jr.,MPAS  
Marquette University  
Clinical Assistant Professor of Physician Assistant  
Studies  
Associate Chair, Physician Assistant Studies  
Director, Didactic Education in Physician Assistant  
Studies

Robert (Bob) Peoples, Ph.D.  
Purdue University  
Associate Professor of Biomedical Sciences

Jacqueline Podewils, M.S.,CCC-SLP  
University of Wisconsin-Madison  
Coordinator, Clinical Services in Speech Pathology  
and Audiology

Santina Puglisi-Creegan, M.S.,CCC-SLP  
Marquette University  
Clinical Instructor of Speech Pathology and  
Audiology

Gregory M. Rajala, Ph.D.  
Medical College of Wisconsin  
Associate Professor of Biomedical Sciences

Hong Ren, Doctor of Medicine  
Tongji Medical University-China  
Research Assistant Professor of Biomedical  
Sciences

Scheila Schindler-Ivens, P.T.,Ph.D.  
University of Iowa  
Assistant Professor of Physical Therapy

Elizabeth N. Shinnars, Ph.D.  
Medical College of Wisconsin  
Assistant Professor of Biomedical Sciences

Kevin R. Siebenlist, Ph.D.  
Medical College of Wisconsin  
Associate Professor of Biomedical Sciences

Christopher J. Simenz, Ph.D.,CSCS  
University of Wisconsin-La Crosse  
Clinical Associate Professor  
Practicum Coordinator, Exercise Science

Guy G. Simomeau, Ph.D.,P.T.,A.T.C.  
University of Pennsylvania  
Professor of Physical Therapy

Dawn Smith, PA-C,MPAS  
University of Nebraska-Omaha  
Clinical Assistant Professor of Physician Assistant  
Studies  
Associate Chair, Physician Assistant Studies

Dennis G. Sobush, P.T.,D.P.T.,M.A.  
Marquette University  
Associate Professor of Physical Therapy

Andrew Starsky, M.P.T.,D.P.T.  
Marquette University  
Clinical Assistant Professor of Physical Therapy

Tina Stoeckmann, P.T.,D.Sc.,M.A.  
University of Wisconsin-Madison  
Clinical Associate Professor of Physical Therapy

Barbara Troy M.S., R.D.,C.D.  
Mount Mary College  
Adjunct Assistant Professor of Biomedical  
Sciences

Linda K. Vaughn, Ph.D.  
University of Michigan  
Professor of Biomedical Sciences

William Wenninger, M.S.  
Marquette University  
Adjunct Assistant Professor of Biomedical  
Sciences

Robert Wheeler, Ph.D.  
Pennsylvania State University-New Kensington  
Assistant Professor of Biomedical Sciences

Mary Jo Wiemiller, P.M.,PA-C,M.S.  
Rosiland Franklin University of Health Sciences  
Clinical Assistant Professor of Physician Assistant  
Studies  
Chair, Physician Assistant Studies

Dana Ziegler, Ph.D.  
University of Kentucky  
Research Assistant Professor in Biomedical  
Sciences

## College of Nursing

### Administrators

Margaret Faut Callahan, CRNA,Ph.D.,F.A.A.N.  
Dean, College of Nursing  
Professor of Nursing

Kerry Kosmoski-Goepfert, Ph.D.,R.N.  
Associate Dean, Undergraduate Programs  
Clinical Associate Professor of Nursing

Maureen E. O'Brien, Ph.D.,A.P.R.N.-B.C.  
Associate Dean, Graduate Programs  
Clinical Associate Professor of Nursing

Robert Topp, Ph.D.,R.N.  
Associate Dean, Research  
Professor of Nursing

Rev. Walter J. Stohrer, S.J.,Ph.D.  
Chaplain

Larry Vanden Busch, M.B.A.  
Business Officer

### Faculty and Department Administrators

Lea T. Acord, Ph.D.,R.N.  
University of Pittsburgh  
Professor of Nursing

Abir Bekhet, Ph.D.,R.N.  
Case Western Reserve University  
Assistant Professor of Nursing

Ruth Ann Belknap, Ph.D.,R.N.,PMHCNS-B.C.  
Wayne State University  
Associate Professor of Nursing  
Sabbatical: 2011-12

Lesley Boaz, Ph.D.,A.P.N.P.  
Marquette University  
Clinical Assistant Professor of Nursing

Kathleen Bobay, Ph.D.,R.N.,N.E.A.-B.C.  
University of Michigan  
Associate Professor of Nursing  
Sabbatical:Spring 2012

Marilyn Bratt, Ph.D.,R.N.  
University of Wisconsin-Milwaukee  
Assistant Professor of Nursing

Susan Breakwell, D.N.P.,A.P.H.N.-B.C.  
Rush University-Chicago  
Clinical Associate Professor of Nursing



Margaret Bull, Ph.D.,R.N.,F.A.A.N.  
University of Wisconsin-Milwaukee  
Professor of Nursing

Margaret Faut Callahan, CRNA,Ph.D.,F.A.A.N.  
Rush University-Chicago  
Dean, College of Nursing  
Professor of Nursing

Diane Dressler, M.S.N.,C.C.R.N.  
Marquette University  
Clinical Assistant Professor of Nursing

Richard Fehring, Ph.D.,R.N.  
The Catholic University of America  
Professor of Nursing

Marilyn Frenn, Ph.D.,R.N.  
University of Wisconsin-Milwaukee  
Associate Professor of Nursing

Jill Guttermson, Ph.D.,R.N.  
University of Minnesota  
Assistant Professor of Nursing

Kristin Haglund, Ph.D.,R.N.,B.C.,F.N.P,P.N.P  
University of Wisconsin-Milwaukee  
Associate Professor of Nursing

Lisa Hanson,  
Ph.D.,R.N.,C.N.M.,A.P.N.P.,F.A.C.N.M.  
Rush University-Chicago  
Associate Professor of Nursing  
Sabbatical:Spring 2012

Ronda Hughes, Ph.D.,R.N.,F.A.A.N.  
Johns Hopkins University  
Associate Professor of Nursing

Norah Johnson, Ph.D.,R.N.,C.P.N.P.  
Marquette University  
Assistant Professor of Nursing

Kelli Jones, M.S.N.,R.N.  
Marquette University  
Clinical Instructor of Nursing

Sr. Rosalie Klein, D.Sc.,R.N.  
Tulane University  
Dean Emerita

Kerry Kosmoski-Goepfert, Ph.D.,R.N.  
University of Illinois-Chicago  
Clinical Associate Professor of Nursing  
Associate Dean, Undergraduate Programs

Judith Kowatsch, M.S.N.,R.N.C.  
Marquette University  
Clinical Assistant Professor of Nursing

Mary Ann Lough, Ph.D.,R.N.  
University of Wisconsin-Milwaukee  
Assistant Professor of Nursing

Maureen O'Brien, Ph.D.,R.N.,P.C.N.S.-B.C.  
The University of Texas at Austin  
Clinical Associate Professor of Nursing  
Associate Dean, Graduate Programs

Mallory O'Brien, Ph.D.  
University of Wisconsin-Madison  
Clinical Assistant Professor of Nursing

Heidi Paquette, M.S.,R.N.,N.N.P-B.C.  
University of Wisconsin-Madison  
Clinical Instructor of Nursing

Linda Piacentine, Ph.D.,A.C.N.P-B.C.,C.N.R.N.  
Marquette University  
Clinical Instructor of Nursing

Karen Robinson, Ph.D.,R.N.,C.N.M.  
Marquette University  
Assistant Professor of Nursing

Mary Jane Schank, Ph.D.,R.N.  
Marquette University  
Professor Emerita of Nursing

Kathryn Schroeter, Ph.D.,R.N.,C.N.O.R.  
University of Wisconsin-Milwaukee  
Clinical Assistant Professor of Nursing

Tracy A. Schweitzer, Ph.D.,R.N.  
University of Wisconsin-Milwaukee  
Clinical Assistant Professor of Nursing

Margaret Sebern, Ph.D.,R.N.  
University of Illinois-Chicago  
Assistant Professor of Nursing

Christine Shaw, Ph.D.,A.N.P.-B.C.,F.N.P.-B.C.  
University of Wisconsin-Milwaukee  
Clinical Associate Professor of Nursing

Robert Topp, Ph.D.,R.N.  
Ohio State University  
Professor of Nursing  
Associate Dean, Research

Leona G. VandeVusse,  
Ph.D.,R.N.,C.N.M.,F.A.C.N.M.  
University of Wisconsin-Milwaukee  
Associate Professor of Nursing

Madeline Wake, Ph.D.,R.N.,F.A.A.N.  
University of Wisconsin-Milwaukee  
Dean Emerita

Darlene Weis, Ph.D.,R.N.  
Marquette University  
Associate Professor Emerita of Nursing

Marianne E. Weiss, D.N.Sc.,R.N.  
University of San Diego  
Associate Professor of Nursing

Sarah A. Wilson, Ph.D.,R.N.  
University of Wisconsin-Milwaukee  
Associate Professor Emerita of Nursing

Aimee Woda, M.S.N.,R.N.  
Marquette University  
Clinical Instructor of Nursing

## College of Professional Studies

### Administrators

Robert J. Deahl, Ph.D.  
Dean, College of Professional Studies  
Assistant Professor of Theology

Eva Soeka, J.D.  
Director, Center for Dispute Resolution Education  
Professor, Dispute Resolution

Lisa M. Youretz, M.Ed.  
Director, Adult Student Advising

Sandra H. Cleveland, M.Ed.  
Associate Dean, Undergraduate Degree Programs  
Adjunct Instructor of Leadership and Organizations

Margaret J. Felber, B.S.  
Director, Academic Business Affairs

John F. Fenelon, M.A.  
Coordinator, Admissions and Records

Lori Kazaks, B.A.  
Coordinator, Recruitment

Ronald Kuramoto, M.A.  
Director, Future Milwaukee

Cynthia Lorentzen, B.A.  
Director, Marketing

Felisa Parris, M.S.  
Academic Adviser

### Faculty and Department Administrators

William H. Barrett, M.B.A.  
Southern Methodist University  
Adjunct Instructor of Leadership and Organizations

Jonathan Bechtel, M.A.  
Marquette University  
Adjunct Instructor of Philosophy

Sheila Bernhardt, M.L.S.  
Marquette University  
Adjunct Instructor of Leadership and Organizations

Jodi L. Blahnik, Ph.D.  
Marquette University  
Adjunct Instructor of Psychology

Patrick G. Callan, M.B.A.  
University of Michigan  
Adjunct Instructor of Computer Science

Sheena M. Carey, M.A.  
Marquette University  
Adjunct Instructor of Communications Studies

Johnette L. Caulfield, Ph.D.  
Marquette University  
Professor of Leadership Studies and Public Service  
Associate Dean and Director, Graduate Programs

Jennifer D. Charpentier, Ph.D.  
University of Minnesota  
Adjunct Instructor of Communications Studies

Stepahnie A. Christopher, M.A.  
Marquette University  
Adjunct Instructor of Communications Studies

David J. Church, M.A.  
Marquette University  
Adjunct Instructor of Leadership and Organizations and Philosophy

Michael D. Class, S.J.,Ed.D.  
University of Pennsylvania  
Adjunct Assistant Professor of Leadership and Organization and Theology

Sandra H. Cleveland, M.Ed.  
Adjunct Instructor of Leadership and Organizations  
Associate Dean, Undergraduate Degree Programs

Cheryl L. Coan, M.A.  
Marquette University  
Adjunct Instructor of Leadership and Organizations

Mary L. Cogar, M.A.  
James Madison University  
Adjunct Instructor of English

Timothy J. Crain, Ph.D.  
Arizona State University  
Adjunct Professor of History and Leadership and Organizations

Terrence R. Crowe, Ph.D.  
Marquette University  
Adjunct Assistant Professor of Theology and  
Professional Studies Principles

Sharon E. Crowe, M.Ed.  
Marquette University  
Adjunct Instructor of Leadership and Organizations

Kathleen A. Dale, Ph.D.  
University of Wisconsin-Milwaukee  
Adjunct Assistant Professor of English

Matthew D. Dalstrom, Ph.D.  
University of Wisconsin-Milwaukee  
Adjunct Instructor of Social and Cultural Sciences

Robert J. Deahl, Ph.D.  
Gregorian University-Rome  
Dean, College of Professional Studies  
Assistant Professor of Theology

Katherine S. Dean, M.L.S.  
Marquette University  
Adjunct Instructor of Leadership and Organizations

Jodine L. Deppisch, B.A.  
Marquette University  
Adjunct Instructor of Criminology

Gary M. Eckstein, M.A.  
Marquette University  
Adjunct Instructor of Criminology

Kerry Egdorf, Ph.D.  
Ohio University  
Adjunct Assistant Professor of Communication  
Studies

Daniel J. Esposito, Ph.D.  
Marquette University  
Adjunct Assistant Professor of Philosophy

Joe W. Essuman, Ph.D.  
University of Wisconsin-Madison  
Adjunct Professor of Economics

Trudy Fortun, M.A.  
Concordia University  
Adjunct Instructor of Professional Studies  
Foundations

Jeffrey M. Gabrysiak, J.D.  
Marquette University  
Adjunct Assistant Professor of Criminology and  
Law

Kurt H. Gering, B.S.  
Marquette University  
Adjunct Instructor of Leadership and Organizations

Arnitta Holliman, B.A.  
Marquette University  
Adjunct Instructor of Psychology

Jay A. Jacobson, M.B.A.  
Loyola University-Chicago  
Adjunct Instructor of Leadership and Organizations

Patrick F. Kennedy, Ph.D.  
University of Wisconsin-Milwaukee  
Adjunct Associate Professor of Criminology and  
Law Studies

Barry M. Kirchoff, M.S.  
Marquette University  
Adjunct Instructor of Computer Science

William J. Leannah, M.S.  
Marquette University  
Adjunct Instructor of Computer Science

Steven M. Levsen, Ph.D.  
Marquette University  
Adjunct Associate Professor of Natural Sciences

Robert J. Lotz, Ed.D.  
Cardinal Stritch University  
Adjunct Instructor of Leadership and Organizations

Christine M. Manion, Ph.D.  
Marquette University  
Adjunct Professor of English

Ann E. Martel, C.P.A.  
University of Wisconsin-Madison  
Adjunct Instructor of Leadership and Organizations

Maureen E. McAvoy, Ed.D.  
Cardinal Stritch University  
Adjunct Assistant Professor of Leadership and  
Organizations and Professional Studies Principles

James M. McNamara, M.A.  
Marquette University  
Adjunct Instructor of English

Rosemarie Meagher, M.L.S.  
Marquette University  
Adjunct Instructor of Leadership and Organizations

Megan Petrik, M.S.  
Marquette University  
Adjunct Instructor of Psychology

Meredith K. Reeves, M.A.  
Cardinal Stritch University  
Adjunct Instructor of English

Amanda D. Retberg, J.D.  
Marquette University  
Adjunct Instructor of Communication

Larry E. Ritzman, M.L.S.  
Marquette University  
Adjunct Instructor of Leadership and Organizations

Diane R. Rondini-Harness, J.D.  
University of Wisconsin-Madison  
Adjunct Instructor of Criminology and Law

Susan Schoenfeld, M.A.  
University of Wisconsin-Madison  
Adjunct Instructor of Communication Studies

James Sielaff, B.S.  
Worcester Polytechnic Institute  
Adjunct Instructor of Mathematics

Alexandra M. Sielaff, Ph.D.  
University of Wisconsin-Madison  
Adjunct Associate Professor of Leadership and Organizations and Statistics

Maharaj Singh, Ph.D.  
Meerut University, India  
Adjunct Professor of Psychology

Ronald Smith, M.L.S.  
Marquette University  
Adjunct Instructor of Communications Studies and Leadership and Organizations

Paul S. Smith, M.S.  
University of Wisconsin-Milwaukee  
Adjunct Instructor of Leadership and Organizations

Eva Soeka, J.D.  
Marquette University  
Professor, Dispute Resolution  
Director, Center for Dispute Resolution Education

Scott P. Spiker, M.A.  
Cornell University  
Adjunct Instructor of Philosophy, Professional Studies

Susan B. Stawicki-Vrobel, M.A.  
Michigan State University  
Adjunct Instructor of Social and Cultural Sciences

Tracy A. Stockwell, M.A.  
Marquette University  
Adjunct Instructor of Communications Studies

Julie Tatlock, Ph.D.  
Marquette University  
Adjunct Assistant Professor of History

Brian L. Truka, M.S.  
Marquette University  
Adjunct Instructor of Mathematics and Philosophy

Mark Waters, M.A.  
Marquette University  
Adjunct Instructor of Criminology and Law

Robert J. Weiss, M.P.A.  
Indiana University  
Adjunct Instructor of Leadership and Organizations

Michelle D. Wendt, M.A.  
Marquette University  
Adjunct Instructor of Communication Studies

Janna Wrench Pochert, M.A.  
Marquette University  
Adjunct Instructor of History and Professional Studies Foundations

David A. Zampino, M.A.  
Marquette University  
Adjunct Instructor of Theology



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# Academic Calendar 2011-12

## UNDERGRADUATE AND PROFESSIONAL STUDIES STUDENTS

### FALL 2011

| Event  | Session 1<br>8/29/11 to 12/17/11 | Session 2<br>8/29/11 to 10/22/11 | Session 3<br>9/12/11 to 11/5/11 | Session 4<br>10/24/11 to 12/17/11 | Session 5<br>11/7/11 to 1/14/12 | Session 6<br>8/29/11 to 1/14/12 (Non-StandardTerm) | Session 7<br>12/19/11 to 1/14/12 (Non-Standard Term) |
|--|----------------------------------|----------------------------------|---------------------------------|-----------------------------------|---------------------------------|--|--|
| Last day for nursing students to apply for readmission or internal transfer for the fall 2011 term | 5/15/11                          |                                  |                                 |                                   |                                 |  |  |
| Advising for continuing students   | 3/21/11 to 3/25/11               |                                  |                                 |                                   |                                 |  |  |
| Early registration begins (by appointment)   | 3/28/11                          |                                  |                                 |                                   |                                 |  |  |
| Preview 2011   | TBD                              |                                  |                                 |                                   |                                 |  |  |
| New freshman registration begins (by appointment)  | 7/5/11                           |                                  |                                 |                                   |                                 |  |  |
| Open registration begins (no appointment required)   | 7/14/11                          |                                  |                                 |                                   |                                 |  |  |
| Last day to apply for readmission to enroll in classes for this session                            | 8/22/11                          | 8/22/11                          | 9/6/11                          | 10/17/11                          | 10/31/11                        | 8/22/11  | 12/12/11   |

|  |  |                |                |                 |                |                |                 |
|--|--|----------------|----------------|-----------------|----------------|----------------|-----------------|
| (for non-nursing students).<br>Nursing students, see deadline above.   |  |                |                |                 |                |                |                 |
| New Student and Family Orientation for new undergraduate students  | 8/24/11 to 8/28/11                         |                |                |                 |                |                |                 |
| <b>Classes begin</b>   | <b>8/29/11</b>                             | <b>8/29/11</b> | <b>9/12/11</b> | <b>10/24/11</b> | <b>11/7/11</b> | <b>8/29/11</b> | <b>12/19/11</b> |
|  |  |                | 1              | 1               | 1              |                | 1               |
| End of summer term through November 30th diploma date  | the last business day of the month         |                |                |                 |                |                |                 |
| <i>Colleges:</i> end of summer term through November 30th Trustees' List due at noon   | the last business day of the month         |                |                |                 |                |                |                 |
| End of summer term through November 30th diplomas available for pick-up at Marquette Central or mailing from the Office of the Registrar | approximately 4-6 weeks after diploma date |                |                |                 |                |                |                 |
| Labor Day holiday; classes excused   | 9/5/11                                     |                |                |                 |                |                |                 |
| Registration ends at midnight  | 9/6/11                                     | 9/6/11         | 9/20/11        | 11/1/11         | 11/15/11       | 9/6/11         | 12/21/11        |
|  |  |                |                |                 | 1              |                |                 |
| Last day to drop a class without a grade   | 9/6/11                                     | 9/6/11         | 9/20/11        | 11/1/11         | 11/15/11       | 9/6/11         | 12/21/11        |
|  |  |                |                |                 | 1              |                |                 |

|  |   |        |         |         |          |        |          |
|--|---|--------|---------|---------|----------|--------|----------|
| of W   |   |        |         |         |          |        |          |
| Deadline for CR/NC option  | 9/6/11  | 9/6/11 | 9/20/11 | 11/1/11 | 11/15/11 | 9/6/11 | 12/21/11 |
| College of Professional Studies orientation  | 9/10/11   |        |         |         |          |        |          |
| University Presidential Inauguration; classes canceled 10:00 a.m. - 1:00 p.m.                    | 9/23/11   |        |         |         |          |        |          |
| <i>Colleges:</i><br>Deadline to code students for end of fall term graduation                    | 10/7/11   |        |         |         |          |        |          |
| Deadline to submit work to instructors for incompletes earned in the spring or summer 2011 terms | 10/7/11   |        |         |         |          |        |          |
| Makeup exams for spring or summer 2011   | 10/7/11 to 10/8/11                              |        |         |         |          |        |          |
| <b>Midterm exams</b>   | <b>10/13/11</b><br><b>to</b><br><b>10/19/11</b> | n/a    | n/a     | n/a     | n/a      | n/a    | n/a      |
| Midterm break; classes excused   | 10/20/11<br>to<br>10/23/11                      | n/a    | n/a     | n/a     | n/a      | n/a    | n/a      |

|   |                      |         |          |         |          |          |        |
|---|----------------------|---------|----------|---------|----------|----------|--------|
| Colleges:<br>Deadline to submit I, IX or X grade changes for spring or summer 2011 to the Office of the Registrar | 10/21/11             |         |          |         |          |          |        |
| Instructors:<br>Midterm grades due at noon  | 10/25/11             | n/a     | n/a      | n/a     | n/a      | n/a      | n/a    |
| Last day for nursing students to apply for readmission for the spring 2012 term                                   | 11/1/11              |         |          |         |          |          |        |
| Advising for spring 2012 term registration  | 10/31/11 to 11/4/11  |         |          |         |          |          |        |
| Deadline to apply for end of spring term or end of summer term graduation   | 11/4/11              |         |          |         |          |          |        |
| Early registration for spring 2012 term begins (by appointment)   | 11/7/11              |         |          |         |          |          |        |
| Deadline to change from credit to audit   | 11/18/11             | 10/7/11 | 10/21/11 | 12/2/11 | 12/30/11 | 11/18/11 | 1/6/12 |
| Deadline to withdraw with a grade of W  | 11/18/11             | 10/7/11 | 10/21/11 | 12/2/11 | 12/30/11 | 11/18/11 | 1/6/12 |
| Thanksgiving holiday; classes excused for Professional Studies  | 11/20/11 to 11/27/11 |         |          |         |          |          |        |

|  |                      |                 |                |                     |                      |                        |                       |
|--|----------------------|-----------------|----------------|---------------------|----------------------|------------------------|-----------------------|
| Thanksgiving holiday; classes excused  | 11/23/11 to 11/27/11 |                 |                |                     |                      |                        |                       |
| Open registration begins for the spring 2012 term (no appointment required)  | 12/1/11              |                 |                |                     |                      |                        |                       |
| <b>Classes end</b>   | <b>12/10/11</b>      | <b>10/22/11</b> | <b>11/5/11</b> | <b>12/17/11</b>     | <b>1/14/12</b>       | <b>1/14/12</b>         | <b>1/14/12</b>        |
| <b>Final exams end</b>   | <b>12/17/11</b>      | <b>10/22/11</b> | <b>11/5/11</b> | <b>12/17/11</b>     | <b>1/14/12</b>       | <b>1/14/12</b>         | <b>1/14/12</b>        |
| <b>Mid-year Commencement</b>   | <b>12/18/11</b>      |                 |                |                     |                      |                        |                       |
| Christmas holiday; classes excused   | 12/18/11 to 1/16/12  | n/a             | n/a            | 12/18/11 to 1/16/12 | 12/18/11 to 12/25/11 | n/a courses off campus | n/a depends on course |
| <i>Instructors:</i><br>Final grades due at noon  | 12/20/11             | 10/25/11        | 11/8/11        | 12/20/11            | 1/17/12              | 1/17/12                | 1/17/12               |
| Deadline for official transcripts from other institutions to arrive at the Office of the Registrar to be processed in time for end of fall term graduation | 12/21/11             |                 |                |                     |                      |                        |                       |
| End of fall term diploma date  | 1/6/12               |                 |                |                     |                      |                        |                       |
| <i>Colleges:</i> End of fall term Trustees' List due at noon   | 1/6/12               |                 |                |                     |                      |                        |                       |
| End of fall term   | 1/10/12              |                 |                |                     |                      |                        |                       |

|   |         |
|---|---------|
| diplomas available for pickup at Marquette Central or mailing from the Office of the Registrar  |         |
| Transcripts available from the Office of the Registrar with end of fall term degree information | 1/27/12 |
| Deadline to submit work to instructors for incompletes earned in the fall 2011 term             | 2/17/12 |

## SPRING 2012

| <b>Event</b>   | <b>Session 1<br/>1/17/12<br/>to<br/>5/12/12</b> | <b>Session 2<br/>1/17/12<br/>to<br/>3/10/12</b> | <b>Session 3<br/>3/12/12<br/>to<br/>5/12/12<br/>(Professional<br/>Studies<br/>ONLY)</b> | <b>Session 4<br/>1/17/12<br/>to<br/>6/16/12<br/>(Non-<br/>Standard<br/>Term)</b> | <b>Session 5<br/>3/19/12<br/>to<br/>5/12/12</b> |
|--|---|---|---|--|---|
| Last day for nursing students to apply for readmission or internal transfer for the spring 2012 term | 11/1/11   |   |   |  |   |
| Advising for continuing students   | 10/31/11 to 11/4/11                             |   |   |  |   |
| Early registration begins (by appointment)   | 11/7/11   |   |   |  |   |
| Open registration begins (no appointment required)   | 12/1/11   |   |   |  |   |
| Last day to apply for readmission to enroll in classes for this session (for                         | 1/9/12  | 1/9/12  | 3/5/12  | 1/9/12   | 3/12/12   |

|   |  |                |                |                |                |
|---|--|----------------|----------------|----------------|----------------|
| non-nursing students).<br>Nursing students, see deadline above.   |  |                |                |                |                |
| Winter Orientation for new undergraduate students   | 1/14/12 to 1/15/12                         |                |                |                |                |
| Martin Luther King Day;<br>classes excused  | 1/16/12                                    |                |                |                |                |
| <b>Classes begin</b>  | <b>1/17/12</b>                             | <b>1/17/12</b> | <b>3/12/12</b> | <b>1/17/12</b> | <b>3/19/12</b> |
| End of fall term through April 30th diploma date  | the last business day of the month         |                |                |                |                |
| <i>Colleges:</i> end of fall term through April 30th Trustees' List due at noon   | the last business day of the month         |                |                |                |                |
| End of fall term through April 30th diplomas available for pick-up at Marquette Central or mailing from the Office of the Registrar | approximately 4-6 weeks after diploma date |                |                |                |                |
| Registration ends at midnight   | 1/25/12                                    | 1/25/12        | 3/20/12        | 1/25/12        | 3/27/12        |
| Last day to drop a class without a grade of W   | 1/25/12                                    | 1/25/12        | 3/20/12        | 1/25/12        | 3/27/12        |
| Deadline for CR/NC option   | 1/25/12                                    | 1/25/12        | 3/20/12        | 1/25/12        | 3/27/12        |
| <i>Colleges:</i> Deadline to code students for end of spring term graduation  | 2/3/12                                     |                |                |                |                |
| Deadline to submit work to instructors for incompletes earned in the fall 2011 term   | 2/17/12                                    |                |                |                |                |
| Makeup examinations for the fall 2011 term  | 2/17/12 to 2/18/12                         |                |                |                |                |
| First date financial aid applications for the summer term are available from the Office of Student Financial Aid                    | 3/1/12                                     |                |                |                |                |
| Last day for nursing students to apply for readmission or internal transfer for the summer 2012 term                                | 3/1/12                                     |                |                |                |                |
| <i>Colleges:</i> Deadline to submit I, IX or X grade changes for fall 2011 to the Office of the                                     | 3/2/12                                     |                |                |                |                |



|  |                            |                |                |                |                |
|--|----------------------------|----------------|----------------|----------------|----------------|
| Registrar  |                            |                |                |                |                |
| Open registration for summer 2012 term begins (no appointment required)  | 3/5/12                     |                |                |                |                |
| <b>Midterm exams</b>   | <b>3/5/12 to 3/9/12</b>    | n/a            | n/a            | n/a            | n/a            |
| Spring break; classes excused for Session 1 (except for Professional Studies)  | 3/11/12 to 3/18/12         | n/a            | n/a            | n/a            | n/a            |
| <i>Instructors:</i> Midterm grades due at noon   | 3/13/12                    | n/a            | n/a            | n/a            | n/a            |
| Advising for fall term 2012 registration   | 3/19/12 to 3/23/12         |                |                |                |                |
| Deadline to apply for end of fall term graduation  | 3/23/12                    |                |                |                |                |
| Early registration for fall term 2012 begins (by appointment)  | 3/26/12                    |                |                |                |                |
| Easter holiday; classes excused for Professional Studies   | 4/1/12 to 4/8/12           |                |                |                |                |
| Easter holiday; classes excused  | 4/5/12 to 4/9/12           |                |                |                |                |
| Deadline to change from credit to audit  | 4/13/12                    | 2/24/12        | 4/27/12        | 4/13/12        | 4/27/12        |
| Deadline to withdraw with a grade of W   | 4/13/12                    | 2/24/12        | 4/27/12        | 4/13/12        | 4/27/12        |
| <b>Classes end</b>   | <b>5/5/12</b>              | <b>3/10/12</b> | <b>5/12/12</b> | <b>6/16/12</b> | <b>5/12/12</b> |
| Deadline for official transcripts from other institutions to arrive at the Office of the Registrar to be processed in time for end of spring term graduation | 5/11/12                    |                |                |                |                |
| <b>Final exams end</b>   | <b>5/12/12</b>             | <b>3/10/12</b> | <b>5/12/12</b> | <b>6/16/12</b> | <b>5/12/12</b> |
| <i>Instructors:</i> Grades due at noon   | 5/15/12                    | 3/13/12        | 5/15/12        | 6/19/12        | 5/12/12        |
| Undergraduate Senior Week  | 5/14/12 to 5/18/12         |                |                |                |                |
| <i>Colleges:</i> end of spring term Trustees' List due at noon   | 5/18/12                    |                |                |                |                |
| <b>Baccalaureate and</b>   | <b>5/19/12 and 5/20/12</b> |                |                |                |                |

|   |         |
|---|---------|
| <b>Commencement</b>   |         |
| End of spring term diploma date   | 5/20/12 |
| End of spring term diplomas available for pickup at Marquette Central or mailing from the Office of the Registrar | 5/23/12 |
| Transcripts available from the Office of the Registrar with end of spring term degree information                 | 6/15/12 |
| Deadline to submit work to instructors for incompletes earned in the spring 2012 term                             | 10/5/12 |

## SUMMER 2012

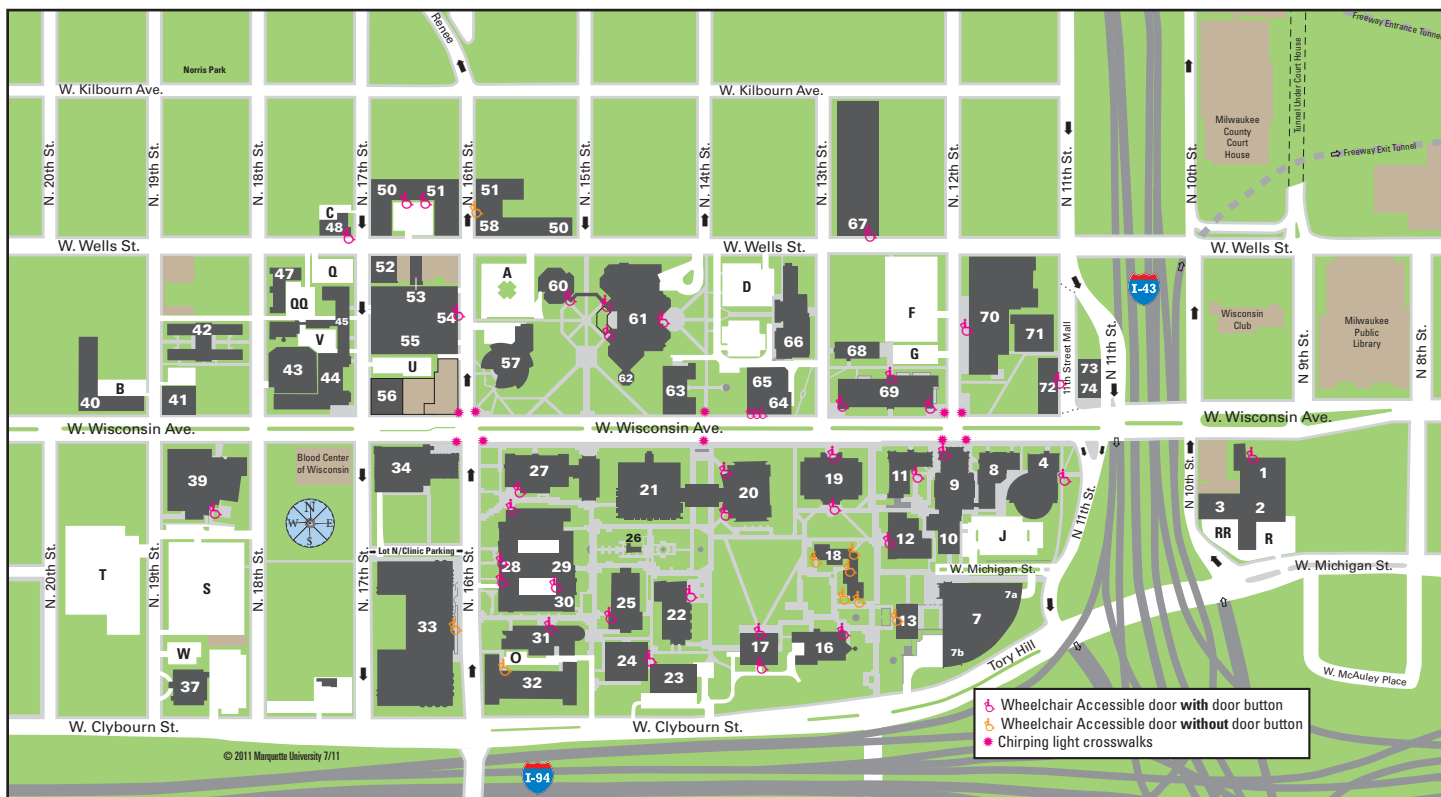
| <b>Event</b>   | <b>Session<br/>1<br/>5/21/12<br/>to<br/>6/30/12</b> | <b>Session<br/>2<br/>7/2/12<br/>to<br/>8/11/12</b> | <b>Session<br/>3<br/>5/29/12<br/>to<br/>7/28/12</b> | <b>Session<br/>4<br/>5/14/12<br/>to<br/>6/30/12</b> | <b>Session<br/>5<br/>7/2/12<br/>to<br/>8/18/12</b> | <b>Session<br/>6<br/>5/14/12<br/>to<br/>8/18/12</b> |
|--|---|--|---|---|--|---|
| First date Financial Aid Applications for the summer term are available from the Office of Student Financial Aid | 3/1/12  |  |   |   |  |   |
| Open registration begins (no appointment required)   | 3/5/12  |  |   |   |  |   |
| Last day to apply for readmission to enroll in classes for this session  | 5/14/12   | 6/25/12  | 5/21/12   | 5/7/12  | 6/25/12  | 5/7/12  |
| <b>Classes begin</b>   | <b>5/21/12</b>                                      | <b>7/2/12</b>                                      | <b>5/29/12</b>                                      | <b>5/14/12</b>                                      | <b>7/2/12</b>                                      | <b>5/14/12</b>                                      |
| After Spring Commencement through August 24th diploma date   | every Friday  |  |   |   |  |   |
| <i>Colleges:</i> After Spring Commencement through August 24th Trustees' List due at noon                        | every Friday  |  |   |   |  |   |

|  |  |                |                |                |                |                |
|--|--|----------------|----------------|----------------|----------------|----------------|
| After Spring Commencement through August 24th diplomas available for pick-up at Marquette Central or mailing from the Office of the Registrar                | approximately 4-6 weeks after diploma date |                |                |                |                |                |
| Registration ends at midnight  | 5/23/12                                    | 7/5/12         | 6/6/12         | 5/22/12        | 7/10/12        | 5/22/12        |
| Last day to drop a class without a grade of W  | 5/23/12                                    | 7/5/12         | 6/6/12         | 5/22/12        | 7/10/12        | 5/22/12        |
| Deadline for CR/NC option  | 5/23/12                                    | 7/5/12         | 6/6/12         | 5/22/12        | 7/10/12        | 5/22/12        |
| Memorial Day observed; classes excused   | 5/28/12                                    |                |                |                |                |                |
| Transcripts available from the Office of the Registrar with end of spring term degree information  | 6/15/12                                    |                |                |                |                |                |
| Deadline to change from Credit to Audit  | 6/15/12                                    | 7/27/12        | 7/13/12        | 6/15/12        | 7/27/12        | 7/20/12        |
| Deadline to withdraw with a grade of W   | 6/15/12                                    | 7/27/12        | 7/13/12        | 6/15/12        | 7/27/12        | 7/20/12        |
| <i>Colleges:</i> Deadline to code students for end of summer term graduation   | 6/15/12                                    |                |                |                |                |                |
| Preview 2012   | TBD  |                |                |                |                |                |
| <b>Classes end for the session</b>   | <b>6/30/12</b>                             | <b>8/11/12</b> | <b>7/28/12</b> | <b>6/30/12</b> | <b>8/18/12</b> | <b>8/18/12</b> |
| Independence Day holiday; classes excused for Professional Studies   | 7/1/12 to 7/8/12                           |                |                |                |                |                |
| <i>Instructors:</i> Grades due at noon   | 7/3/12                                     | 8/14/12        | 7/31/12        | 7/3/12         | 8/21/12        | 8/21/12        |
| Independence Day holiday; classes excused  | 7/4/12                                     |                |                |                |                |                |
| New Freshman Registration  | 7/5/12-7/13/12                             |                |                |                |                |                |
| Deadline for official transcripts from other institutions to arrive at the Office of the Registrar to be processed in time for end of summer term graduation | 8/17/12                                    |                |                |                |                |                |
| New Student and Family   | 8/22/12 to 8/26/12                         |                |                |                |                |                |

|  |         |
|--|---------|
| Orientation for new undergraduate students   |         |
| End of summer term diploma date  | 8/24/12 |
| <i>Colleges:</i> end of summer term Trustees' List due at noon   | 8/24/12 |
| End of summer term diplomas available for pick-up at Marquette Central or mailing from the Office of the Registrar | 8/29/12 |
| Transcripts available from the Office of the Registrar with end of summer term degree information                  | 9/14/12 |
| Deadline to submit work to instructors for incompletes earned in the summer 2012 term                              | 10/5/12 |

*For faculty:* The dates of the academic year for faculty are August 22, 2011 to May 21, 2012. The dates of annual faculty contracts are July 1, 2011 to June 30, 2012.

# Marquette University Campus Map



## Academic/Administrative Buildings

|   |    |
|---|----|
| 707 Building, College of Professional Studies                       | 72 |
| 1700 Building   | 48 |
| Academic Support Facility   | 45 |
| Carpenter Tower   | 73 |
| Clark Hall, College of Nursing                                      | 31 |
| Coughlin Hall   | 18 |
| Cramer Hall   | 28 |
| Cudahy Hall   | 19 |
| Dentistry, School of  | 39 |
| Eckstein Hall, Law School   | 7  |
| Engineering, College of   |    |
| Engineering Hall  | 34 |
| Haggerty Hall and Olin Engineering Center                           | 27 |
| Grounds Maintenance Facility (not shown)                            | 38 |
| Haggerty Hall, and Olin Engineering Center                          | 27 |
| Helpaer Building  | 47 |
| Holthusen Hall, Graduate School                                     | 64 |
| Jesuit Residence  | 63 |
| Johnston Hall, Diederich College of Communication                   | 8  |
| Krueger Child Care Center   | 37 |
| Lalumiere Language Hall   | 17 |
| Marquette Hall, Klingler College of Arts and Sciences               | 11 |
| Marquette Neighborhood Health Center                                | 41 |
| Public Safety   | 54 |
| Schroeder Complex, College of Health Sciences, College of Education | 29 |
| Sensenbrenner Hall  | 4  |
| Service Building  | 23 |

|   |    |
|---|----|
| Straz, Jr., David A., Hall, College of Business Administration, Graduate School of Management | 12 |
| Straz, Jr., David A., Tower   | 3  |
| Student Health Service  | 30 |
| Todd Wehr Chemistry   | 22 |
| Wehr Life Sciences  | 24 |
| William Wehr Physics  | 25 |
| Zilber Hall   | 69 |

## Churches/Chapels

|   |    |
|---|----|
| Chapel of the Holy Family                     | 62 |
| Church of the Gesu, a Jesuit-sponsored parish | 9  |
| Gesu Parish Center                            | 10 |
| St. Joan of Arc Chapel                        | 26 |

## Libraries

|                  |    |
|------------------|----|
| Law Library      | 7  |
| Memorial Library | 21 |
| Raynor Library   | 20 |

## Parking Structures

|                                |        |
|--------------------------------|--------|
| 16th Street Parking Structure  | 55     |
| 18th Street Parking Structure  | 43     |
| Eckstein Hall Parking          | 7a, 7b |
| Wells Street Parking Structure | 67     |

## Art/Entertainment/Recreation Facilities

|   |    |
|---|----|
| Alumni Memorial Union, University Information & Visitors Center | 61 |
| Campus Town   | 51 |
| Gymnasium, Marquette  | 32 |
| Haggerty Museum of Art  | 13 |
| Helpaer Tennis Stadium and Recreation Center                    | 33 |
| Helpaer Theatre   | 16 |

|                           |    |
|---------------------------|----|
| Al McGuire Center         | 70 |
| Rec Plex                  | 2  |
| Union Sports Annex        | 58 |
| Valley Fields (not shown) | 80 |
| Varsity Theatre           | 65 |
| Weasler Auditorium        | 60 |

## Residence Halls

|                                  |    |
|----------------------------------|----|
| Abbottsford Hall                 | 68 |
| Carpenter Tower Hall             | 74 |
| Cobeen Hall                      | 71 |
| Mashuda Hall                     | 40 |
| McCabe Hall                      | 56 |
| McCormick Hall                   | 57 |
| O'Donnell Hall                   | 42 |
| Schroeder Hall                   | 66 |
| Straz, Jr., David A., Tower Hall | 1  |

## University Apartment Buildings

|                        |    |
|------------------------|----|
| Campus Town Apartments | 50 |
| Frenn Building         | 53 |
| Gilman Building        | 52 |
| Humphrey Hall          | 44 |

## University Information – (414) 288-7250

Updated September 2011

# Driving Directions to Marquette University

## From the west on I-94

*Exit #310A — 13th Street*

To 16th Street Parking Structure:

- At end of ramp, turn left onto 13th Street
- North ½ block to Clybourn Street  
(13th Street ends at Clybourn)
- Turn left onto Clybourn Street
- West 3 blocks to 16th Street
- At 16th Street (one-way northbound) turn right
- North 1 ½ blocks on 16th Street
- The 16th Street Parking Structure is on the left,  
between Wisconsin Avenue and Wells Street

## From the south on I-43/I-94

*Exit #72A — 10th Street and*

*Michigan/Tory Hill*

To 16th Street Parking Structure:

- At end of ramp, turn left onto Tory Hill
- Tory Hill becomes Clybourn
- At 16th Street (one-way northbound) turn right
- North 1 ½ blocks on 16th Street
- The 16th Street Parking Structure is on the left,  
between Wisconsin Avenue and Wells Street

## From the north on I-43

*Exit #72E — 11th Street and Highland*

To 16th Street Parking Structure:

- At end of ramp, continue straight on 11th Street (one-way southbound)
- 11th Street will shift left at Wells Street
- From the far right lane, turn right on Wisconsin Avenue
- At 16th Street (one-way northbound) turn right
- North ½ block
- The 16th Street Parking Structure is on the left,  
between Wisconsin Avenue and Wells Street