

MARQUETTE UNIVERSITY

Undergraduate Bulletin



MARQUETTE
UNIVERSITY

Be The Difference.

2004 - 2005

The 2004–2005 *Undergraduate Bulletin* is also available on Marquette University's Web site www.marquette.edu. While the university strives to maintain an accurate online bulletin, the printed bulletin is the university's official document. The provisions of this bulletin are subject to change at any time by Marquette University in its sole discretion.

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The University

HOW TO USE THIS BULLETIN

This 2004–2005 *Marquette University Undergraduate Bulletin* governs curricular requirements of all students entering Marquette University undergraduate programs as freshmen or as advanced standing students during the 2004–2005 academic year. These requirements, and other provisions within this bulletin, may be changed from time to time without notice. Each entering student should preserve his/her copy of the bulletin for reference during his/her entire undergraduate career at Marquette. Each student should refer to subsequent editions of the bulletin for any changes. Additional copies of the bulletin, to be published annually, may be purchased at the university's Book Marq store. Reference copies of the *Undergraduate Bulletin* are available in the Raynor Memorial Libraries as well as in the offices of colleges, schools and departments, and on the university's Web site.

FROM THE PRESIDENT

"We have proclaimed on a number of occasions, both public and private, that historically as a Christian and Catholic institution we are dedicated to the proposition that all human beings possess an inherent dignity in the eyes of their Creator and equality as children of God. The university entirely and consistently disowns, as a matter of principle, any unlawful or wrongful discrimination against the rights of others. It tolerates no such discrimination in its internal affairs and deplores such discrimination wherever it may exist. The university is committed to the principle of equal opportunity in admissions, financial aids, employment and housing regardless of race, color, gender, age, sexual orientation, religion, disability, veteran's status, or national origin. The university also is committed to the principle of affirmative action. The university reserves the right to maintain its heritage and destiny as a Christian and Catholic witness in higher education."

Rev. Robert A. Wild, S.J.
President
Marquette University

THE UNIVERSITY

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 Gesu Church, 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 Jesuit university in the world to officially admit women students. Influenced by the need for certified parochial school teachers, women were admitted to the university's first summer school session that year.

Following World War II, enrollment at Marquette increased dramatically, as at other American colleges and universities. Demand for graduate and professional education grew.

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

Since 1990, Marquette has added 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 in business administration program; and programs in physician assistant studies and exercise science.

Today Marquette University has a campus of approximately 80 acres and 51 buildings located in downtown Milwaukee. It consists of 11 colleges and schools:

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

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 com-

mitted 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-curricula 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 which we share.

ACCREDITATION

An educational institution is only as strong as the level of excellence which it demands of itself as well as of its faculty and students. As an institution, 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 which have resulted in accreditation and approval of its academic programs from these additional organizations and associations:

Accreditation Board for Engineering and Technology, Accreditation Review Commission on Education for the Physician Assistant, Accrediting Council on Education in Journalism and Mass Communication, American Chemical Society, American College of Nurse Midwives, American Dental Association, American Physical Therapy Association, American Psychological Association, American Society of Exercise Physiology (ASEP), Association to Advance Collegiate Schools of Business, Association of American Law Schools, Council on Accreditation of the American Dental Association, Commission on Collegiate Nursing Education, Council on Legal Education and Admissions to the Bar of the American Bar Association, Council on Social Work Education, Department of Public Instruction of State of Wisconsin, Council on Academic Accreditation of The American Speech-Language-Hearing Association, National Accrediting Agency for Clinical Laboratory Sciences, National Athletic Training Association Board of Credentialing (NATABOC) National Council for Accreditation of Teacher Education, National

League for Nursing Accrediting Commission, Wisconsin State Board of Nursing and Council for National Register of Health Service Providers in Psychology.

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.

2004–2005 ACADEMIC CALENDAR

FALL TERM 2004–2005

KEY: Session 1 — 16 weeks, 8/30/04 – 12/18/04 (semester)

Session 2 — 8 weeks, 8/30/04 – 10/23/04

Session 3 — 8 weeks, 9/13/04 – 11/6/04

Session 4 — 8 weeks, 10/25/04 – 12/18/04

Session 5 — 8 weeks, 11/8/04 – 1/15/05

Session 6 — 21 weeks, 8/30/04 – 1/15/05

Session 7 — 4 weeks, 12/20/04 – 1/15/05

August 2004

| | | |
|-------|------------------|---|
| 25-29 | Wednesday-Sunday | New undergraduate student orientation |
| 28 | Saturday | MBA Saturday classes begin for Fall Term |
| 30 | Monday | Classes begin for Sessions 1 & 2 |
| 30 | Monday | Late Registration for Fall Sessions 1 & 2 begin |

September 2004

| | | |
|----|----------|---|
| 6 | Monday | Labor Day holiday; classes excused |
| 7 | Tuesday | Late Registration for Fall Sessions 1, 2 & 6 ends |
| 11 | Saturday | College of Professional Studies and Part-Time Studies orientation |
| 13 | Monday | Fall Session 3 begins |
| 13 | Monday | Fall Session 3 late registration begins |
| 21 | Tuesday | Fall Session 3 registration ends |

October 2004

| | | |
|-------|-----------------|--|
| 8-9 | Friday-Saturday | Make-up examinations; removal of incompletes from Spring Term 2003–04 |
| 8 | Friday | Final day for withdrawal with grade of W for Session 2 |
| 21-22 | Thursday-Friday | Undergraduate midterm break; undergraduate classes excused for Session 1 |
| 22 | Friday | Final day for withdrawal with grade of W for Session 3 |
| 23 | Saturday | Fall Session 2 ends |
| 25 | Monday | Fall Session 4 begins |
| 25 | Monday | Session 4 late registration begins |

November 2004

| | | |
|-------|------------------|--|
| 1-5 | Monday-Friday | Advising for Spring Term 2004–2005 registration |
| 2 | Tuesday | Session 4 registration ends |
| 6 | Saturday | Fall Session 3 ends |
| 8 | Monday | Early Registration for Spring Term 2004–2005 begins |
| 8 | Monday | Fall Session 5 begins |
| 8 | Monday | Session 5 late registration begins |
| 16 | Tuesday | Session 5 registration ends |
| 19 | Friday | Final day for withdrawal with grade of W for Session 1 & 6 |
| 22-28 | Monday-Sunday | Thanksgiving holiday; classes excused for Professional Studies |
| 24-28 | Wednesday-Sunday | Thanksgiving holiday; classes excused for Sessions 1 & 4 |
| 29 | Monday | Sessions 1, 4 & 5 classes resume |

December 2004

| | | |
|-------|-----------------|--|
| 2 | Thursday | Interim registration for Spring Term 2004–2005 begins |
| 3 | Friday | Final day for withdrawal with grade of W for Session 4 |
| 11 | Saturday | Classes end for Session 1 |
| 13-18 | Monday-Saturday | Final examinations for Session 1 |

| | | |
|------------|---------------|--|
| 18 | Saturday | Fall Sessions 1 & 4 end |
| 19 | Sunday | Mid-year graduation ceremonies |
| 19-26 | Sunday-Sunday | Christmas holiday; classes excused for Session 5 |
| 19-Jan. 16 | Sunday-Sunday | Christmas holiday; classes excused for Sessions 1 |
| 20 | Monday | Classes begin for Session 7 |
| 20 | Monday | Session 7 late registration begins |
| 22 | Wednesday | Session 7 registration ends |
| 31 | Friday | Final day for withdrawal with grade of W for Session 5 |

SPRING TERM 2004–2005

Key: Session 1 — 16 weeks 1/18/05 – 5/14/05 (semester)

Session 2 — 8 weeks 1/18/05 – 3/12/05

Session 3 — 8 weeks 3/14/05 – 5/14/05

Session 4 — 20 weeks 1/18/05 – 6/4/05

January 2005

| | | |
|----|----------|---|
| 15 | Saturday | Fall Sessions 5 & 7 end |
| 15 | Saturday | College of Professional Studies/Part-time Studies orientation |
| 17 | Monday | Late registration for Spring Term 2004–2005 begins for Sessions 1 & 2 |
| 17 | Monday | Martin Luther King Day; classes excused |
| 18 | Tuesday | Classes begin for Spring Sessions 1 & 2 |
| 25 | Tuesday | Late registration for Spring Sessions 1 & 2 ends |

February 2005

| | | |
|-------|-----------------|---|
| 18-19 | Friday-Saturday | Make-up examinations; removal of incompletes for undergraduates from Fall 2004–2005 |
| 25 | Friday | Final day for withdrawal with grade of W for Session 2 |

March 2005

| | | |
|-------|----------------|--|
| 7 | Monday | Registration for Summer Term begins |
| 12 | Saturday | Spring Session 2 ends |
| 14 | Monday | Session 3 begins; |
| 14 | Monday | Session 3 late registration begins |
| 19 | Saturday | Session 3 registration ends |
| 20-27 | Sunday-Sunday | Easter holiday; classes excused for courses offered by the College of Professional Studies |
| 20-29 | Sunday-Tuesday | Spring Break/Easter holiday; Sessions 1 & 3 |
| 27 | Sunday | Easter Sunday |
| 30 | Wednesday | Classes Resume for Sessions 1 & 3 |
| 31 | Thursday | Advising for Fall Term 2005–2006 begins |

April 2005

| | | |
|-----|------------------|--|
| 1-6 | Friday-Wednesday | Advising for Fall Term 2005–2006 continues |
| 7 | Thursday | Early registration for Fall Term 2005–2006 begins |
| 15 | Friday | Final day for withdrawal with grade of W for Session 1 |
| 28 | Thursday | Interim registration for Fall term 2005–2006 begins |
| 29 | Friday | Final day for withdrawal with grade of W for Session 3 |

May 2005

| | | |
|-------|-----------------|--|
| 7 | Saturday | Classes end for Session 1 |
| 9-14 | Monday-Saturday | Final examinations for Session 1 |
| 14 | Saturday | Spring Sessions 1 & 3 end |
| 15-20 | Sunday-Friday | Undergraduate Senior Week |
| 16 | Monday | Summer Sessions 4 & 6 begin |
| 16 | Monday | Summer Sessions 4 & 6 late registration begins |
| 21-22 | Saturday-Sunday | Baccalaureate and Commencement |

* Calendar dates for a number of programs and classes may differ from the semester (Session 1) calendar dates listed above.
Please check the *Timetable of Classes* or check with your particular program to verify dates.

SUMMER 2005

Key: Summer Session 1 — 5/23/05 – 7/2/05 (Traditional first session 6 week courses)
 Summer Session 2 — 7/5/05 – 8/13/05 (Traditional second session 6 week courses)
 Summer Session 3 — 5/31/05 – 7/30/05 (8 week courses primarily offered by PS)
 Summer Session 4 — 5/16/05 – 7/2/05 (First group of 7 week courses primarily offered by MBA and PA programs)
 Summer Session 5 — 7/5/05 – 8/27/05 (Second group of 7-8 week courses primarily offered by PA programs)
 Summer Session 6 — 5/16/05 – 8/13/05 (Courses normally longer than 8 weeks in length)

May 2005

| | | |
|----|-----------|--|
| 23 | Monday | Summer Session 1 begins |
| 23 | Monday | Summer Session 1 late registration begins |
| 24 | Tuesday | Summer Sessions 4 & 6 late registration ends |
| 25 | Wednesday | Summer Session 1 late registration ends |
| 30 | Monday | Memorial Day observed; classes excused |
| 30 | Monday | Summer Session 3 late registration begins |
| 31 | Tuesday | Summer Session 3 begins |

June 2005

| | | |
|----|----------|--|
| 4 | Saturday | Spring Session 4 ends |
| 7 | Tuesday | Summer Session 3 late registration ends |
| 17 | Friday | Final day for withdrawal with grade of W for Summer Sessions 1 & 4 |

July 2005

| | | |
|------|---------------|--|
| 2 | Saturday | Summer Sessions 1 & 4 end |
| 3-10 | Sunday-Sunday | Independence Day holiday; classes excused for courses offered by College of Professional Studies |
| 4 | Monday | Summer Sessions 2 & 5 late registration begins |
| 4 | Monday | Independence Day; classes excused |
| 5 | Tuesday | Summer Sessions 2 & 5 begin |
| 7 | Thursday | Summer Session 2 late registration ends |
| 12 | Tuesday | Summer Session 5 late registration ends |
| 15 | Friday | Final day for withdrawal with grade of W for Summer Session 3 |
| 22 | Friday | Final day for withdrawal with grade of W for Summer Session 6 |
| 29 | Friday | Final day for withdrawal with grade of W for Summer Session 2 |
| 30 | Saturday | Summer Session 3 ends |

August 2005

| | | |
|----|----------|---|
| 12 | Friday | Final day for withdrawal with grade of W for Summer Session 5 |
| 13 | Saturday | Summer Session 2 & 6 ends |
| 27 | Saturday | Summer Session 5 ends |

Note: Final examinations for Summer Sessions classes are administered during the last regularly scheduled class.

ACADEMIC PROGRAMS

UNDERGRADUATE PROGRAMS

College of Arts and Sciences: Curricula leading to the degrees bachelor of arts, bachelor of science and associate in arts (criminology and law studies only).

College of Business Administration: Curricula leading to the degree bachelor of science.

College of Communication: Curricula leading to the degree bachelor of arts.

School of Education: Curricula leading to certification in elementary/middle school and middle school/ secondary school teaching.

College of Engineering: Curricula in biomedical, civil, computer, electrical, industrial and mechanical engineering leading to the degrees bachelor of science in biomedical, civil, computer, electrical, industrial and mechanical engineering.

College of Health Sciences: Curricula in athletic training, biomedical sciences, clinical laboratory science, dental hygiene, exercise science, and speech pathology and audiology leading to the degree bachelor of science. Also, curriculum in physician assistant studies leading to the professional degree master of physician assistant studies and curriculum in physical therapy leading to the professional degree doctor of physical therapy.

College of Nursing: Curriculum leading to the degree bachelor of science in nursing.

College of Professional Studies: Curricula leading to the degrees bachelor of science and bachelor of arts.

Marquette University assumes no responsibility for the success of its students in obtaining professional certification or other types of professional licensure.

GRADUATE SCHOOL

The Graduate School, in partnership with several undergraduate colleges, offers joint bachelor's and master's degrees. As of this printing, the colleges of Engineering, Business Administration (accounting, applied economics, and human resources), Health Sciences (speech pathology and audiology), Arts and Sciences (political science) and Nursing are participating. For information, contact the undergraduate college.

Marquette University's Graduate School offers more than 50 different master's and doctoral degrees and several certificate and post-master's programs. For a complete list of program offerings or for additional information, including admission criteria, see the *Graduate Bulletin* which is available upon request from the Graduate School and on the Graduate School's Web page at www.grad.mu.edu.

PROFESSIONAL PROGRAMS

SCHOOL OF DENTISTRY

The Marquette University School of Dentistry has provided quality dental education, research and clinical services since 1894. The School of Dentistry is the only dental school in the state of Wisconsin and, as such, is the largest single provider of dental care in the state.

The School of Dentistry opened a new 120,000-square-foot dental facility and clinic in August 2002. The new dental facility enhances the dental education program by facilitating the delivery of a case-based, integrated curriculum that reduces repetitive didactic course work to a sequence of multidisciplinary tracks and mini-tracks. The goal is to provide dental students a more comprehensive approach to learning dentistry while they consider the overall health of a patient — not just oral care. Besides the adult clinics, there are special clinics for children, patients requiring orthodontic treatment and a clinic designed to treat the elderly and the disabled. In addition, the new facility accommodates expanded continuing education programs providing the latest technology, including distance learning and teledentistry capabilities, as well as opportunities for hands-on courses.

The School of Dentistry grants a doctor of dental surgery degree. In addition, the school offers graduate programs in the specialties of endodontics, orthodontics, dental materials and a combined program of fixed and removable prosthodontics.

LAW SCHOOL

For more than a century, the Marquette University Law School has been dedicated to training moral and ethical lawyers to meet the changing needs of society. The Law School prides itself on producing lawyers capable of representing clients in many and varied practice settings. A Marquette legal education combines solid grounding in fundamental legal principles with

opportunities for practical application in a variety of simulation and clinical experiences. The strong Law School core curriculum prepares students for practice anywhere in the United States. In recent years particular emphasis has been placed on business law, intellectual property, family law, sports law, criminal justice and international law. As a Catholic and Jesuit Law School, Marquette emphasizes the lawyer's obligation to serve the community and act as an agent of change in society.

The Law School is home to the National Sports Law Institute and the Sports Law Review. The Marquette Law Review is recognized as an outstanding scholarly journal. The intellectual property curriculum is one of the most developed curricula in the country, which includes the Intellectual Property Law Review. The Law School's clinical program includes placements throughout southeast Wisconsin in a variety of government and public service agencies.

The school offers the juris doctor degree through full or part-time study. Upon graduation, Marquette graduates are admitted to the Wisconsin Bar through the diploma privilege.

MASTER OF PHYSICIAN ASSISTANT STUDIES DEGREE

The five-year master of physician assistant studies degree program, which is included in the College of Health Sciences, consists of two phases: the pre-professional phase and the professional phase. This program is an entry-level professional course of study which allows individuals who are working toward a baccalaureate degree or who hold a baccalaureate degree to apply for admission to the professional phase of the program.

Marquette freshmen who enroll in the College of Health Sciences and who begin the pre-PA track as biomedical sciences major are able to apply during their sophomore year. If accepted, they begin the professional component of the program in their junior year. Marquette University assumes no responsibility for the success of its students in obtaining professional certification or other types of professional licensure.

DOCTOR OF PHYSICAL THERAPY DEGREE

The six-year doctor of physical therapy degree program, which is included in the College of Health Sciences, consists of two phases: the pre-professional phase and the professional phase. During the pre-professional phase, students will work toward completion of a bachelor's degree of choice and will complete all undergraduate prerequisites for entry to the professional phase. Course selection will vary depending on each student's prior academic preparation and choice of undergraduate major. Entrance requirements and possible majors are outlined in the document detailing the DPT program available from the Office of Undergraduate Admissions. In the three-year professional phase of the program, students will be enrolled in curricula culminating in a doctor of physical therapy. Entrance requirements for transfer students into the professional phase may be obtained in the Department of Physical Therapy.

Marquette University assumes no responsibility for the success of its students in obtaining professional certification or other types of professional licensure.

PROGRAMS FOR WORKING ADULTS

The College of Professional Studies provides undergraduate degrees and non-credit courses, certificates and programs for adult students. Non-credit programs are administered by Corporate Outreach and Professional Development (formerly Continuing Education) and credit programs are administered by the Undergraduate Degree Program in the college.

CERTIFICATE AND EXAM PREPARATION PROGRAMS

The College of Professional Studies offers professional development workshops, seminars and certificate programs in business, management, computers, preparation courses for the Law School Admission Test (LSAT), Professional in Human Resources (PHR) and Senior Professional in Human Resources (SPHR) and other areas for adults with varying educational backgrounds. Short-term, non-credit programs are available days and evenings throughout the year. Most programs are held on the Marquette campus. However, some programs are held at off-campus learning sites, including Waukesha. For information on courses call (414) 288-7345; fax (414) 288-3298; e-mail register@marquette.edu or write to The College of Professional Studies, Marquette University, 1212 W. Wisconsin Avenue, Room 103, P.O. Box 1881, Milwaukee, WI 53201-1881.

UNDERGRADUATE DEGREE PROGRAMS

The College of Professional Studies offers a variety of undergraduate degrees designed for working adults. Set within convenient eight- and 16-week sessions, classes are on Saturdays from 8 a.m. to noon and from 1 p.m. to 5 p.m. and evenings during the week. See the program

section of the College of Professional Studies in this bulletin for specific admission criteria, degree requirements and curriculum information.

Qualified students may enroll with no prior college experience or with transfer credits from other colleges. Working in concert with Part-time Studies, the College of Professional Studies coordinates a range of academic, administrative and student services for working adults.

PART-TIME STUDIES

The Part-time Studies Program offers a variety of undergraduate degrees for working adults. Students enrolled in the Part-time Studies Program, may take classes during weekdays, evenings, and weekends depending on the course of study.

Students eligible for the Part-time Studies Program are individuals who must pursue or continue their education on a part-time basis until graduation. (Part-time is defined as 11 or fewer credit hours per term.)

Taking a reduced course load on a temporary basis does not constitute eligibility for the Part-time Studies Program. Students temporarily taking 11 or fewer credit hours in a term will be charged the non Part-time Studies tuition rate, as quoted in the Tuition, Fees and Housing section of this bulletin.

For information for both the College of Professional Studies and the Part-time Studies Program, call (414) 288-3153; fax (414) 288-3298, e-mail MCPS@Marquette.edu or write to: The College of Professional Studies, Marquette University, 1212 Building, 103, P.O. Box 1881, Milwaukee, WI 53201-1881.

SUMMER STUDIES

Summer Studies offers undergraduate and professional courses that are applicable to degrees in all colleges and schools of the university in the following session formats during the summer term: 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 undergraduate and graduate 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 information, contact the Office of Summer Studies, Marquette University, Marquette Hall, 013, P.O. Box 1881, Milwaukee, WI 53201-1881; call (414) 288-7506; fax (414) 288-6318; or e-mail (summerstudy@Marquette.edu); or visit the Summer Studies Web site at www.marquette.edu/summer.

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 only dental school in the State of Wisconsin. Pre-dental scholars complete a bachelor's degree and a dental degree in seven years, rather than the eight years normally required. The program accepts applications from high school seniors and first-semester freshmen at Marquette.

Pre-dental scholars enroll either in the College of Arts and Sciences and major in Biology or in the College of Health Sciences and major in Biomedical Sciences, completing the undergraduate portion of their studies in three years. They are awarded a bachelor's degree upon successful completion of the first year in Marquette University's School of Dentistry. For information, call the Office of Undergraduate Admissions at (414) 288-7302.

PRE-LAW SCHOLARS PROGRAM

The Pre-law Scholars program is an accelerated program that provides a select group of students with conditional admission to Marquette University Law School. Pre-law Scholars complete their bachelor's and law degrees in six years, rather than the seven years normally required.

Pre-law Scholars enroll in the College of Arts and Sciences or College of Business Administration, 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 their first year in Marquette Law School. For information, contact the Office of Undergraduate Admissions at (414) 288-7302.

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.

The center also conducts opportunities for foreign studies and international exchanges. For information, contact the center at (800) 544-1789.

STUDY ABROAD PROGRAMS

Students may study abroad with a Marquette-sponsored program, an exchange program, an affiliated program, a Marquette summer or intersession program, or a non-Marquette program. The College of Business Administration Study Abroad Office (David A. Straz, Jr. Hall Room 101, (414) 288-5151, and the College of Arts and Sciences Study Abroad Office (Marquette Hall Room 208, (414) 288-7059, maintain study abroad resource centers with collections of study abroad materials available to all students interested in exploring study abroad possibilities. Study abroad information is also available at the reserve desk in Raynor Library. Students planning to study abroad should submit applications to the appropriate study abroad office. All students should consult the Web site at www.marquette.edu/studyabroad for application deadlines and other procedures.

In order to keep their Marquette records current, students who study abroad must also register via CheckMarq for a zero-credit "International Study" course for the term in which they will be abroad. Course number and section varies for each study abroad site, and some courses require consent. Students should check with the Study Abroad Coordinators regarding registration for the appropriate course and section. It is the student's responsibility to have all necessary documents and records sent to Marquette for processing upon completion of their study abroad.

MARQUETTE-SPONSORED PROGRAMS

Marquette sponsors programs in Madrid, Spain, and in Xalapa, Mexico. Most forms of financial aid (including grants, scholarships, and federal financial aid) may apply. Details are available from the Office of Student Financial Aid, 1212 Building, (414) 288-7390.

MARQUETTE STUDY CENTER IN MADRID, SPAIN

Since 1965 Marquette has offered students with the required Spanish language skills the opportunity to study for one or two terms in Spain. Courses are taught in Spanish by the faculty of the Universidad Complutense de Madrid. Fields of study include art, economics, history, philosophy, political science, Spanish language and literature, and theology. Special features include excursions, social and cultural activities, and a language review during the orientation before the term begins. The Resident Director is a member of the College of Arts and Sciences faculty. For information, contact the administrative director, Study Center in Madrid, College of Arts and Sciences, Marquette Hall, (414) 288-7059.

CAPE TOWN, SOUTH AFRICA INTERNATIONAL SERVICE LEARNING PROGRAM

Marquette University's South African International Service Learning Program offers Marquette students the opportunity to study for one semester at the Desmond Tutu Leadership Academy (DTLA) and the University of Western Cape (UWC) in Cape Town, South Africa. The program is open to students of junior standing and beyond. The program's curriculum accommodates students from all academic disciplines. Students integrate rigorous academic studies with direct immersion in the culture through community-based service. Required and elective courses are offered three days a week, while students engage in concrete service-learning through individualized field placements two days a week. Community living near UWC offers students the opportunity to delve more deeply into issues they encounter as they immerse themselves more fully into South African society. Students increase their understanding of the history, culture, traditions, and peoples of South Africa through excursions to places of historical and cultural importance within the country. For more information, contact the Study Abroad Coordinator at (414) 288-7059.

MARQUETTE SUMMER PROGRAM AT THE UNIVERSITY OF VERACRUZ, XALAPA, MEXICO

(see section on Summer and Intersession Programs)

EXCHANGE PROGRAMS

Marquette has developed over 20 exchange agreements with universities abroad and in Puerto Rico. Under these agreements, students pay tuition to Marquette but study at a partner university abroad. Most forms of financial aid apply. Details are available from the Office of Student Financial Aid, 1212 Building, (414) 288-7390. For information about Marquette's exchange programs listed below contact Dr. Jamshid Hosseini; Study Abroad Director; College of Business Administration; David A. Straz, Jr. Hall, 101; (414) 288-5151.

AUSTRALIA**Monash University, Melbourne**

Located in Melbourne Australia, Monash is a comprehensive university offering courses in most major fields. This program is open to all university students with junior standing and a minimum of 3.000 Q.P.A.. The semesters run from July to mid-November and Mid-February to June. University housing available, Marquette tuition, most forms of financial aid apply, visa required.

Macquarie University, Sydney

(see Affiliated Programs, page 13)

AUSTRIA**University of Innsbruck, Innsbruck**

This comprehensive university offers courses in most major fields. This program is open to all university juniors with a minimum 2.750 Q.P.A. and strong German language proficiency. The semesters run from October to mid-January and March to late June. University housing available, Marquette tuition, most forms of financial aid apply, three German courses beyond GERM 004 or GERM 010 required, visa required.

BELGIUM**University of Antwerp, Antwerp**

Located in the heart of the port city of Antwerp, UFSIA offers English instructional courses in a selection of business and economics courses. As such, this university is more suitable for business students in their junior year with good academic standing. Semesters run from September to mid-January and February to late June. Limited University housing available, Marquette tuition, most forms of financial aid apply, visa is required.

CANADA**Laval University, Quebec City**

Laval is located in the capital city of Quebec. Two options are available at Laval: Summer French Language courses and semester or year study abroad. Two summer sessions run from mid-May to late June and July to mid-August (some French proficiency is needed to take the placement exam). Some scholarships may be available for summer sessions.

The semester/year study abroad is available to juniors in most fields with good academic standing and strong French proficiency. Semesters run from September to mid-December and January to mid-May. University housing available, most forms of financial aid apply, three French courses beyond FREN 004 or FREN 010 required for the semester/year studies, FREN 002 required for summer language studies, visa required for semester/year studies.

CHILE**Pontificia Universidad Catolica de Chile (PUC), Santiago**

Located in Santiago, Chile, PUC is a comprehensive university offering most majors. PUC is available to all Marquette students in their junior year with strong Spanish language proficiency and in good academic standing. The academic year runs from October to late June and the spring semester runs from March to late June (fall only is not feasible). University housing available, Marquette tuition, most forms of financial aid apply, three Spanish courses beyond SPAN 004 or SPAN 010 required, visa required.

DENMARK**Southern Denmark Business School, Sønderborg**

The Sønderborg campus of this university offers English instructional classes in business. Junior business students in good academic standing may apply for this program, which runs from August to mid-December and January to mid-June. Private apartments, Marquette tuition, most forms of financial aid apply, visa required.

FRANCE

Catholic University of Lille, Lille

This university which offers most majors is located in Lille, France. One of its business schools, IÉSEG, offers a limited number of business classes in English. Strong French language proficiency is required to apply for this program. The semesters run from September to mid-January and from February to mid-June. University housing available, Marquette tuition, most forms of financial aid apply, three French Language course beyond FREN 004 or FREN 010 required, visa required.

Catholic University of Lyon, Lyon

This university which offers most majors is located in Lyon, France. Its business school, ESDES, offers a limited number of business classes in English. Strong French language proficiency is required to apply for this program. The semesters run from September to mid-January and from February to mid-June. Limited University sponsored housing available, Marquette tuition, most forms of financial aid apply, three French Language course beyond FREN 004 or FREN 010 required, visa required.

Universite Robert Schuman (IECS), Strasbourg

Strasbourg, in the Alsace region of France is the home to this university. This exchange program is available to business students with strong French Language proficiency only. A limited number of business classes are offered in English. The semesters run from September to mid-January and from February to mid-June. IECS offers a summer program with business courses taught in English, which runs during the month of June. Some basic French background is needed to participate in the summer program. Private housing, Marquette tuition, most forms of financial aid apply, three French Language course beyond FREN 004 or FREN 010 required for the semester/year studies, visa required.

GERMANY

Katholische Universitat Eichstaett, Ingolstadt and Eichstaett

The university is located in Eichstaett while the business school is located in Ingolstadt, both near Munich, Germany. Business classes at the Ingolstadt Campus are both in English and in German while the classes offered in most other majors at the Eichstaett Campus are in German only. University provided residence halls are available in both locations. The semesters run from October to late March and from April to late July (i.e., a one-semester study abroad is only feasible in the second semester, i.e., April to July). University housing available, Marquette tuition, most forms of financial aid apply, three German courses beyond GERM 004 or GERM 010 required for the semester/year studies, visa required.

Phillipps Universitat, Marburg

This is a major university offering courses in most majors. Courses are in German and, therefore, strong German proficiency is required. The semesters run from September to February and March to late-June. University housing available, Marquette tuition, most forms of financial aid apply, three German courses beyond GERM 004 or GERM 010 required for the semester/year studies, visa required.

IRELAND

National University of Ireland, Galway

This comprehensive university offers courses in most majors. The Q.P.A. requirement for this program is strictly 3.000 and higher. Marquette students usually use private apartments while studying at NUI – Galway. University housing available (private housing more common), sophomore standing, Marquette tuition, some financial aid applies.

ITALY

John Cabot University, Rome

(see Affiliated Programs, page 13)

JAPAN

Sophia University, Tokyo

Students may study a full year, during the spring semester, or in the summer at Sophia University located in Tokyo, Japan. Courses are available in humanities, philosophy, theology, business, and economics. University housing is available in this expensive city (cost of living during the semester, including housing exceeds \$8,000). The academic year runs from September through July and the second semester is from March to July (fall semester only is,

therefore, not feasible). University housing available, Marquette tuition, most forms of financial aid apply, some knowledge of Japanese (i.e., JAPA 002) required, visa required for semester/year studies.

MEXICO

Universidad Iberoamericana, Mexico City

Courses are offered in most majors at this comprehensive university. All courses are in Spanish, therefore strong Spanish proficiency is required. Semesters run from September to December and from February to June. University housing is available. Summer school is available at Iberoamericana. University housing available, three courses beyond SPAN 004 or SPAN 010 required, Marquette tuition, most forms of financial aid apply, visa required for semester/year studies.

PUERTO RICO

Universidad del Sagrado Corazon, San Juan

The Sacred Heart University is located in San Juan, Puerto Rico. Many majors are offered. Strong Spanish Language proficiency is required for this program. Semesters run from September through December and from January through June. University housing available, Marquette tuition, most forms of financial aid apply, three Spanish courses beyond SPAN 004 or SPAN 010 required.

SPAIN

Universidad Pontificia Comillas – ICADE/ICAI, Madrid

Located near central Madrid ICADE and ICAI are the business & economics and engineering schools of this Jesuit university, respectively. Courses are offered in most fields at these two campuses as well as the main campus on the outskirts of Madrid. All classes are in Spanish, therefore, strong Spanish proficiency is required. Independent housing is available around the campuses. Semesters run from September to mid-January and from late February through early July. University housing available, three courses beyond SPAN 004 or SPAN 010 required, Marquette tuition, most forms of financial aid apply, visa required for semester/year studies.

Universidad de Deusto, San Sebastian and Bilbao

This comprehensive university offers courses in Spanish in most majors. The San Sebastian Campus is most suitable for business and economics majors and the Bilbao Campus for most other majors. Nearly all classes are in Spanish, therefore, strong Spanish proficiency is required. University sponsored independent housing is available. Semesters run from September to mid-January and from late February through early July. University housing available, three courses beyond SPAN 004 or SPAN 010 required, Marquette tuition, most forms of financial aid apply, visa required for semester/year studies.

Institucion Universitaria de la Compania de Jesus (ETEA), Cordoba

Our exchange program is with ETEA, the business school of this Jesuit university only. Classes are nearly all in Spanish, therefore, strong Spanish proficiency is required. Semesters run from September to mid-January and late February through early July. University residence halls and independent housing are available. Private housing, three courses beyond SPAN 004 or SPAN 010 required, Marquette tuition, most forms of financial aid apply, visa required for semester/year studies.

AFFILIATED PROGRAMS

Federal financial aid, but not Marquette aid (including scholarships and grants), applies to affiliated programs. Details are available from the Office of Student Financial Aid, (414) 288-7390.

The following affiliated programs are administered by Marquette University. For more information about Marquette's affiliated programs listed below, contact Dr. Jamshid Hosseini; Study Abroad Director; College of Business Administration; David A. Straz, Jr. Hall, 101; (414) 288-5151 or go to www.marquette.edu/studyabroad.

AUSTRALIA

Macquarie University, Sydney

Located in Sydney, Macquarie University is a modern, sophisticated institution that prides itself on innovative programs, outstanding academic achievement and high quality research. It enrolls more than 25,000 students including over 5,000 international students. Macquarie is emerging as one of the most international universities in the world in terms of that proportion of the total student body which is from overseas. This institution offers courses in most areas

including, arts and sciences, humanities, social sciences, business and economics, engineering, communications, journalism, health sciences and nursing. The minimum QPA requirement to apply to Macquerie is 2.500. Semesters run from mid February through June and from early July through November. The tuition is about \$5,400 per semester and housing is about \$2,200. Marquette financial aid does not apply, most other forms of financial aid apply. For information, contact College of Business Administration Study Abroad Office (David A. Straz, Jr. Hall 101 (414) 288-5151.

ITALY

John Cabot University, Rome

Located in Rome, John Cabot University (JCU) is an independent, accredited four-year college of liberal arts and sciences, with an international degree-seeking student body and over 120 courses from which to choose. Travel in Italy, classes on site at famous monuments and museums throughout the city and a range of extra-curricular activities are just some of the enhancements of John Cabot's program. Students visiting from the United States meet others from Europe, Latin America, Asia, the Middle East and Africa, as well as the majority of Italian 4-year students. Study Abroad students typically share rooms in the characteristic apartments in the area arranged by the university. Total immersion in the Roman way of life brings new understanding and appreciation of how others live. The minimum QPA requirement to apply to JCU is 3.000. Semesters run from late August through mid December and from early January through mid May. The tuition is about \$6,200 per semester and housing package including a range of services and amenities is about \$4,200. Marquette financial aid does not apply, most other forms of financial aid apply. For information, contact College of Business Administration Study Abroad Office (David A. Straz, Jr. Hall 101 (414) 288-5151.

UNITED KINGDOM

City University, London

Located in central London near the business district City University is a well-known institution with several of its academic programs consistently ranking among the top three in the UK. This program is most suitable for business, communications, engineering and computer science students with minimum Q.P.A. of 3.000. Semesters run from September to December and January to April. Limited University housing available, sophomore standing, tuition is approximately \$6,800, Marquette financial aid does not apply, most other forms of financial aid apply. For information, contact the College of Business Administration Study Abroad Office (David A. Straz, Jr. Hall 101, (414) 288-5151.

St. Clare's, Oxford

The Liberal Arts Programme of St. Clare's—Oxford offers arts and sciences, humanities, and business and economics classes primarily to American as well as a small number of international students. Several excursions and cultural activities are organized for the students throughout the semester. The semesters run from early September to mid-December and early January to mid-May. College housing available, sophomore standing, tuition approximately \$10,000, Marquette financial aid does not apply, most other forms of financial aid apply, most suitable for Arts & Sciences, Business, Health Sciences, and Nursing majors. For information, contact the College of Business Administration Study Abroad Office (David A. Straz, Jr. Hall 101, (414) 288-5151).

The following affiliated programs are administered by other institutions:

AUSTRALEARN (AUSTRALIA AND NEW ZEALAND)

In cooperation with AustraLearn, this program offers direct enrollment at 19 universities in Australia and four universities in New Zealand. AustraLearn is a non-profit study abroad program offering comprehensive services, including a 10-day in-country orientation, housing arranged by the program, and on-site support. For information, contact the Study Abroad Coordinator, College of Arts and Sciences, Marquette Hall, (414) 288-7059.

THE BEIJING CENTER OF LANGUAGE AND CULTURE, BEIJING, CHINA

Administered by Loyola Marymount University, this Jesuit program offers students the opportunity to combine intensive language study with course work, cultural seminars and academic excursions. For information, contact the College of Arts and Sciences, Study Abroad Coordinator, Marquette Hall, (414) 288-7059.

CENTER FOR EDUCATION ABROAD ARCADIA UNIVERSITY (FORMERLY BEAVER COLLEGE), VARIOUS COUNTRIES

In cooperation with the Center for Education Abroad at Arcadia University, this program offers study abroad opportunities in a variety of countries, including direct enrollment in Australia, England, Ireland, Mexico, Scotland and Wales, and island programs in England, Greece, Italy and Spain. Internships are available in Canberra, Dublin, Edinburgh and London. The program offers comprehensive services, including a 10-day in-country orientation, housing arranged by the program, and on-site support. For information, contact the College of Arts and Sciences Study Abroad Coordinator, Marquette Hall. (414) 288-7059

THE ROME CENTER OF LIBERAL ARTS

In cooperation with Loyola University, Chicago, this program offers courses in the liberal arts and Italian studies. Courses are taught in English; students live in Rome Center housing. For information, contact the College of Arts and Sciences Study Abroad Coordinator, Marquette Hall, (414) 288-7059.

SCHOOL FOR INTERNATIONAL TRAINING (SIT)

The School for International Training is a comprehensive study abroad program that offers field-based, academic programs in over 40 countries in Africa, Europe, Latin America, Asia and the Pacific. The program consists of introductory language study, interdisciplinary seminars, independent fieldwork, and culminates with a directed study project. With the exception of the language course, all coursework is taught in English. Students live with local families. For more information contact the College of Arts and Sciences Study Abroad Coordinator, Marquette Hall 208, (414) 288- 7059.

UW–MILWAUKEE — NOTRE DAME — MARQUETTE STUDY PROGRAM IN CHILE

In cooperation with the University of Wisconsin—Milwaukee and Notre Dame, this program combines special courses for U.S. students with direct enrollment at the Pontificia Universidad Católica de Chile in Santiago, Chile. Students live in private homes with local Chilean families. An optional service-learning component is available. For information, contact the College of Arts and Sciences Study Abroad Coordinator, Marquette Hall, (414) 288-7059.

SUMMER AND INTERSESSION PROGRAMS

Students may earn Marquette credit in summer and intersession programs. Presently, Marquette conducts summer programs in Belgium (Antwerp), Quebec City, Canada, Strasbourg, France, Mexico (Xalapa) and intersession programs (in December and January) in the Czech Republic. For information, students should contact:

Belgium, Canada, France or the Czech Republic, the College of Business Administration International Business Office (David Straz, Jr. Hall 101, (414) 288-5151).

Mexico: the Department of Foreign Languages and Literatures, Lalumiere Language Hall, (414) 288-7063.

NON-MARQUETTE STUDY PROGRAMS

Students may elect to study abroad with an accredited non-Marquette program. They must obtain the approval of their college or program and, if possible, determine course equivalents in advance. Neither Marquette aid nor federal financial aid applies to non-Marquette programs. For information regarding studying abroad with non-Marquette programs, contact the Colleges of Business Administration (David A. Straz, Jr. Hall 101, (414) 288-5151) and Arts and Sciences (Marquette Hall 208, (414) 288-7059).

HONORS PROGRAM

Organized in 1963, the Honors Program is designed to enhance the educational experience of intellectually talented and academically motivated students from all colleges in the university. In general, students apply to the program when applying to Marquette, but the program does review a small number of applications from students at the end of their first semester at Marquette. For a complete description of the Honors Program, please refer to the Honors Program section located after the University Core of Common Studies section in this bulletin.

THE EDUCATIONAL OPPORTUNITY PROGRAM

The Educational Opportunity Program 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 counseling, specialized courses, developmental seminars and tutoring, as well as personal 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.

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 precollege 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.

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 provides 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.

ENGLISH AS A SECOND LANGUAGE

The Office of Campus International Programs provides advanced English language courses for students of other language backgrounds who need further formal instruction in speaking, reading or writing skills for success in their Marquette academic studies. Students whose evidence of English language ability does not assure adequate proficiency are required to take an English language placement test after arrival at Marquette. The results of the placement tests are used to assign students to any appropriate English language courses. English language (ESLP) courses are offered in both the fall and spring terms. There are also sections of English 001 and 002 designated for these students. Up to six credits of ESLP course work may be counted toward degree requirements in all undergraduate colleges except Engineering.

MILITARY PROGRAMS

AIR FORCE AEROSPACE STUDIES

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 com-

mission, 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. 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. Three- and two-year students complete only the professional officer course, but attend a six-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 selected Air Force bases throughout the U.S. The Air Force pays all expenses associated with field training. The major areas of study include junior officer training, aircraft and air crew orientation, career orientation, survival training, base functions and Air Force environment, and physical training.

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 \$350 per month during their junior academic year and \$900 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 \$250 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 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.

MILITARY SCIENCE

The Department of Military Science was established under the auspices of the College of Arts and Sciences at Marquette University in 1951. The Marquette University Army Reserve Officers' Training Corps (AROTC) program is a mentally and physically challenging program combining college courses in military science and leadership with a fully paid five-week leadership camp. (Students usually attend the National Advanced Leadership Camp during the summer between their junior and senior year). Training, received as part of the Military Science and Leadership program is focused on preparing undergraduate men and women to receive commissions in the U.S. Army, Army National Guard or the U.S. Army Reserve.

The Army understands that today's students need flexibility, so we offer a variety of options in completing the Military Science 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 National Advanced Leadership Camp 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 located at www.armyrotc.com, and are awarded based upon merit, not financial need, by the Marquette University-Department of Military Science. These scholarships are worth \$17,000 annually with a \$600 textbook allowance. Scholarship students also receive at least a \$2,500 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. Scholarship applications may be obtained through the Department of Military Science, Marquette University, or at www.armyrotc.com. Current college students may apply for four, three, and two-year on-campus scholarships.

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 Q.P.A. of 2.500;
- have a minimum score of 920 on the SAT or 19 on the ACT;
- satisfactorily explain any record of arrest and/or civil conviction;
- 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 can be obtained from the Department of Military Science. On-campus applications may be submitted at any time during the school year.

Partnership in Nursing Excellence Scholarships: Marquette University is one of 41 colleges and universities to be designated as one of the U.S. Army's Partnership in Nursing Excellence Schools. As part of this program, the Marquette ROTC department is able to offer four-year PNE 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 Milwaukee-area universities and colleges may, with approval of the dean of the 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.

NAVAL SCIENCE

The Naval ROTC Unit, established at Marquette University in 1940, provides qualified commissioned officers for the United States Navy and Marine Corps. The mission is to develop midshipmen morally, mentally and physically, and to imbue them with the highest ideals of honor, courage and commitment in order to commission college graduates as officers who possess a basic professional background, are motivated towards careers in the naval service and have a potential for future development in mind and character so as to assume the highest responsibilities of command, citizenship and government. Graduates who complete all requirements will receive reserve 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 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 are also required to attend a summer training period for a period of four to six weeks each summer. This summer training introduces midshipmen to the fleet, and the life of a junior naval officer. The summer training period 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 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 Chief of Naval Education and Training scholarships. Students are selected on a competitive basis after completing a minimum of one term as a NROTC college program student. Selection boards meet semi-annually in March and June to consider students based on their most recent term. Students may receive scholarships 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.

All NROTC navy option students, except nurse option, are required to 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. One course in computer science, two terms of English, and either American Military History (HIST 118) or National Security Policy (POSC 129) are required for all navy option students.

All Marine Corps option students, scholarship and college program, are required to complete only the naval science class requirements during the first and last year. Calculus and physics are not required unless they are a prerequisite of the major field of study. During the junior and senior years, students are required to take the marine corps naval science courses and American Military History (HIST 118) or National Security Policy (POSC 129). 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 additional 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 our Web site at www.marquette.edu/rotc/navy/.

ADMISSION PROCEDURES

APPLICATION FOR UNDERGRADUATE ADMISSION

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.

After reviewing the admission procedures and requirements, prospective students should request an application from the Office of Undergraduate Admissions, Marquette University, P.O. Box 1881, Milwaukee, Wisconsin 53201-1881; or the university's Web site, www.marquette.edu. The request for an application should indicate the classification for which the applicant wishes to apply.

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 with 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 records and other materials required for admission are described in this section. With the exception of physical therapy and athletic training, admissions decisions are made on a rolling, first-come, first-served basis. If colleges and schools of the university have special admission procedures and requirements, they are listed in the respective sections of this bulletin.

Applicants with questions not answered in this section are encouraged to write to the Office of Undergraduate Admissions, Marquette University, P.O. Box 1881, Milwaukee, WI 53201-1881, or call (800) 222-6544 or (414) 288-7302.

ADMISSION TO THE FRESHMAN CLASS

GENERAL NORMS

Graduation from an accredited high school or the equivalent is required. 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

| | English | Social Studies | Foreign Language | Mathematics | Science (any) | Biology | Chemistry | Physics | Additional Academic Subjects | TOTAL |
|-------------------------|---------|----------------|------------------|-------------|---------------|---------|-----------|---------|------------------------------|-------|
| Arts and Sciences | 4 | 3 | 2 | 3# | 2† | | | | 2 | 16 |
| Business Administration | 4 | 2 | 2†† | 3# | 2 | | | | 3 | 16 |
| Communication | 4 | 2 | 2 | 2 | 1 | | | | 5 | 16 |
| Engineering | 4 | 2 | | 4 | 1 | 1 | 1 | 1 | 2 | 16 |
| Nursing | 4 | 2 | | 3## | | 1* | 1* | | 5 | 16 |
| Health Sciences | 4 | 2 | | 3# | | 1 | 1 | | 5 | 16 |

*Academic units specifically required for admission.

#Algebra, geometry, intermediate algebra required. Fourth year of mathematics recommended.

##Algebra and geometry required. Third-year mathematics suggested.

†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.

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). Information concerning these examinations can be obtained from high school counselors or by requesting information from the respective organizations: www.collegeboard.com or 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 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 WITH 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. In addition to the application forms and high school record, the applicant must submit an official transcript from each post-secondary school, college, university or other institution in which he or she was registered. The applicant must request that these transcripts be sent to the Office of Undergraduate Admissions, Marquette University, P.O. Box 1881, Milwaukee, Wisconsin 53201-1881. 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. Failure to report attendance at any such institution since high school graduation is considered sufficient reason for dismissal.

Generally, applicants for advanced standing 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, be exempted from some freshman and sophomore subjects, provided they present acceptable substitutes.

An applicant for advanced standing admission who has completed fewer than 12 term hours of college level work (or its equivalent) and who has never taken the SAT or the ACT is required to take one of these tests and to have the results sent to Marquette University. (See Entrance Examinations, above.)

The university may accept credit from two- and four-year accredited educational institutions based on an individual evaluation of credits by the student's college 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 the university.
- 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.

NOTE: Refer to individual colleges on transfer credit policy for any transfer requirements.

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

1. Credit is not allowed for courses completed with lower than a C grade; credit may not be granted for certain courses of a professional, technical, or vocational nature.
2. A maximum of 16 hours of correspondence credits (including USAFI courses) may be accepted, provided that these credits are presented on the valid transcript of an accredited institution and that 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.
3. Credits from community colleges may not exceed one-half the number of semester hours required for graduation from a four-year curriculum.
4. A tentative evaluation of credits is usually made at the time of admission to Marquette University. 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.
5. Registered nurse applicants follow general admission procedures. Transcripts from nursing programs and/or colleges must be sent to the Office of Undergraduate Admissions. The applicant must be a graduate of a nationally accredited program in nursing and must be currently licensed to practice as a registered nurse.
6. The final 30 credits earned must be from Marquette.

In addition, advanced standing students must meet all graduation requirements of their curricula as stated elsewhere 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, applicants are encouraged to provide transcripts of high school and/or college work. An interview with the Office of Undergraduate Admissions may be requested.

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 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 with advanced standing.

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

ADMISSION OF NON-IMMIGRANT STUDENTS

Marquette University is pleased to enroll more than 600 non-immigrant students from more than 80 countries. Applicants for undergraduate admission who are not citizens or immigrants (permanent residents) of the United States should contact the Office of Campus International Programs for the correct information and assistance to become students. The address is Alumni Memorial Union, 425B, Marquette University, P.O. Box 1881, Milwaukee, WI 53201-1881, U.S.A. The telephone number is (414) 288-7289; fax number (414) 288-3701; and e-mail World@Marquette.edu.

The application procedure is to help each candidate show the Admissions Committee that he or she has the four abilities which are necessary for successful studies at Marquette. These four are high academic ability, positive personal ability, strong English language ability, and sufficient financial ability. To show these four abilities, each applicant must arrange for the appropriate evidence to reach the Office of Campus International Programs. The application procedure can require from one week to many months or more, depending primarily upon when the applicant

can provide the required application materials. A complete list of application materials is sent to each prospective student along with complete instructions and information about Marquette University.

ADMISSION TO SUMMER STUDIES

Detailed information on admission for the summer term may be found in the *Summer Studies Bulletin* (published each February and sent upon request). For information, contact the Office of Summer Studies, Marquette University, Marquette Hall, 013, P.O. Box 1881, Milwaukee, WI 53201-1881; call (414) 288-7506; fax (414) 288-6318; or e-mail summerstudy@Marquette.edu; or visit the Summer Study Web site at www.marquette.edu/summer.

APPROVAL FOR 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.

READMISSION OF FORMER STUDENTS

A former Marquette University student who wishes to return after the lapse of at least one full term (excluding summer studies) must submit to the Office of the Registrar an Application for Readmission. 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 accepted as early as possible. Application forms are available in the Office of the Registrar and should be filed no later than three weeks prior to the day classes begin. A re-entering student who wishes degree status and who has attended another school or schools since leaving Marquette must request that a transcript of credits from each such school be sent to the Marquette 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.

TRANSFER WITHIN THE UNIVERSITY

The various colleges of Marquette University operate under the jurisdiction of separate deans. Therefore, enrolled students must submit to the Office of the Registrar a formal Application for Transfer if they wish to transfer from one college to another. If the Application for Transfer is approved, the student will be governed by the degree requirements of the college to which transfer is made. 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 accepted as early as possible. Application forms are available in the Office of the Registrar and should be filed no later than three weeks before the day classes begin.

CHANGE OF STATUS

Applicants who enter any program at Marquette University with non-degree status may later petition for degree status, as either full time or part time. Application forms are available in the Office of the Registrar and should be filed no later than three weeks before the day classes begin.

SECOND BACCALAUREATE 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.

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 credit. Eligibility for graduation with university honors and the attendant quality point average 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, a student with a good scholastic record who has 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.

TUITION, FEES AND HOUSING

Payment of tuition and other fees is due in full approximately 15 days prior to the beginning of classes for the fall and spring terms. A student's registration is not complete until all tuition, fees and housing charges are paid. Students who do not pay in full or enroll in the Marquette Monthly Payment Plan will be subject to a late payment fee assessed at one per cent a month on the outstanding balance. All courses for which a student is officially registered as of the close of Late 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. Therefore, to avoid unnecessary fee charges and unnecessary courses with permanent grades of UW, WA or F on the student's permanent record, it is the student's responsibility to be certain that before Late Registration ends, his/her official registration accurately reflects only those courses for which the student plans to enroll.

If a student has an unpaid Bursar account at the end of any term, the student will not be permitted to enroll for a subsequent term. A student is not entitled to receive an official transcript of credits or diploma from the Registrar until all tuition, fees and housing have been paid.

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 for the course(s) in question.

All rates in this bulletin are believed accurate and current when printed. However, Marquette University reserves the right to modify any rate to correct a printing mistake or to respond to any unforeseeable change in circumstances, e.g., energy surcharge, governmental action.

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 payments (direct debit from checking or savings account) may be made by accessing the link on the Bursar Web site at www.marquette.edu/bursar.
- Credit card payments may be made with Phone Charge Inc. You will be assessed a convenience fee for each transaction up to \$2,000. To use this service, call (877) 685-7794, access through the Bursar Web site or on-line at www.paybyinternet.com.

MARQUETTE MONTHLY PAYMENT PLAN ADMINISTERED BY AMS

Marquette offers the Marquette Monthly Payment Plan administered by Academic Management Services (AMS). This payment plan enables a student to budget all of their annual tuition, room and board, and student fee expenses into 10 monthly installments. The Marquette Monthly Payment Plan is not a loan; there are no interest or finance charges. The only cost is a \$90 annual enrollment fee. The 10-month program begins on Aug. 1, 2004. The enrollment form may be completed and submitted on line at www.tuitionpay.marquette.com. If you have questions or would like assistance with enrollment please contact AMS at (800) 635-0120.

PAYMENT BY A UNIVERSITY APPROVED THIRD PARTY SPONSOR

Students whose tuition is paid by a university approved third party sponsor (ROTC, foreign embassies, companies directly billed) must submit their billing authorization by the payment due date.

TUITION (NEW STUDENT RATE 2004–2005)

| | |
|---|-------------|
| Full-time (12 to 18 credit hours), per term, All colleges except Engineering | \$10,775.00 |
| Full-time (12 to 19 credit hours), per term, Engineering | 10,775.00 |
| Full-time (credit hours may vary), per term, Physical Therapy (Master's phase) | 10,775.00 |
| Physical Therapy (Doctoral phase) | 11,605.00 * |
| Part-time, per credit hour Part-time Studies Program | 415.00 |
| Non Part-time Studies Program | 635.00 |
| Excess credit hours over full-time, per credit hour | 185.00 |
| Study Center in Madrid: Per term | 8,710.00 |
| Credit established by examination, per credit hour | 75.00 |
| Les Aspin Center for Government Congressional Internship Program, per term | 13,695.00 |
| Language Reading Course (cost per course/audit only) FREN/GERM (non-credit) | 480.00 ** |

* This rate applies to students in years four through six of the program.

** Special rate. No other discounts apply.

LABORATORY AND SPECIAL COURSE FEES

Nursing

| | |
|--|------------|
| Uniforms (must be purchased through a private vendor. Vendor list available from the College of Nursing.) | \$100.00 * |
| Assessment equipment (Stethoscope for sophomore nursing courses, \$25.00.** Sphygmomanometer for senior nursing course 179, \$60.00.) . . . | 80.00 * |
| Sophomore- and junior-year equipment | 60.00 |
| Diagnostic Assessment Test for Licensure Examination (seniors only)* | 40.00 |

* Approximate fee. Exact amount based upon vendor costs in effect at time of registration.

** Paid in fall term only.

SERVICE FEES

| | |
|--|--------|
| Nursing credits by Advanced Course Validation fee (RN students only) | 200.00 |
| Student Activity Fee (per 16-week term) | 24.00 |
| UPASS Program (per 16-week term) | 38.00 |
| Student Health Service Fee (per 16-week term) | 129.00 |

For part-time students: The \$25.00 examination fee to establish credit will be credited against the \$75.00 per credit hour tuition if credit is earned.

For full-time students: The \$25.00 examination fee to establish credit will be the only charge if credit hours so earned come within an 18-hour course load (19-hour course load in Engineering). Credits earned by examination in excess of the full-time course load will be charged \$75.00 per credit hour, and the \$25.00 examination fee will be credited against this amount.

HOUSING

Living in a residence hall provides easy access to classes, comfortable furnishings, out-of-class educational experiences, an opportunity to develop personal friendships, recreational facilities, and a chance to get involved in the university community. The university accommodates approximately 3,000 students in men's, women's and coeducational residence halls. Traditional and block meal options are offered to students. Most accommodations are double rooms, although single, triple and quadruple rooms also are available.

An important aspect of residence hall living is the trained staff members available to assist students. Qualified students are employed as resident assistants, while full-time professionally trained staff direct each hall.

All single freshman and sophomore students, except those residing with their parents or guardians during the academic year, are required to live in university residence halls. In addition, all students living in residence halls are required to purchase a meal plan each semester. Students who are at least 21 or two years beyond high school are allowed to select their own

housing and may wish to inquire about university-owned apartment buildings. A limited number of efficiency and one-bedroom apartments are available on campus for married students, although the facilities cannot accommodate children beyond infancy.

A deposit of \$100 is required for room reservation and is payable in conjunction with the tuition deposit. Room assignments are based upon the date of deposit, so new students who apply early are more apt to receive their preferred location. Final assignment of rooms remains at the discretion of the university, however, and though it is possible to meet the first alternative for most students, it is not possible to guarantee everyone a preferred assignment.

Carpenter Tower is the only residence hall that is open during Winter and Spring Break periods. Students who are assigned to Carpenter Tower may stay over these break periods for an additional charge. A limited number of spaces are available for housing during the Winter and Spring Break periods. Students may make reservations for these accommodations by contacting the Office of Residence Life.

Students who are not required to live in residence halls may obtain a list of off-campus housing from the university. Meal plans also are available for off-campus students who wish to eat in the residence halls. Inquiries about housing should be addressed to the Office of Residence Life, P.O. Box 1881, Marquette University, Milwaukee, WI 53201-1881.

2004-2005 RESIDENCE HALL, APARTMENTS AND MEAL PLAN RATES PER TERM

| Hall | Room Type | 19 Meals | 14 Meals | 175 Block | 125 Block |
|-------------------|--------------|----------|----------|-----------|-----------|
| Cobeen: | Single | \$4,200 | \$4,101 | \$4,145 | \$4,034 |
| | Double | 3,634 | 3,535 | 3,579 | 3,468 |
| | Triple | 3,003 | 2,904 | 2,948 | 2,837 |
| | Quad | 3,682 | 3,583 | 3,727 | 3,516 |
| Straz: | Double | 3,936 | 3,837 | 3,881 | 3,770 |
| | Quad | 3,279 | 3,180 | 3,224 | 3,113 |
| Mashuda: | Single | 4,246 | 4,147 | 4,191 | 4,080 |
| | Double | 3,839 | 3,740 | 3,784 | 3,673 |
| | Large Double | 3,881 | 3,782 | 3,826 | 3,715 |
| | Triple | 3,196 | 3,097 | 3,141 | 3,030 |
| McCormick: | Quad | 3,844 | 3,745 | 3,789 | 3,678 |
| | Double | 3,723 | 3,624 | 3,668 | 3,557 |
| O'Donnell: | Triple | 3,196 | 3,097 | 3,141 | 3,030 |
| | Single | 4,200 | 4,101 | 4,145 | 4,034 |
| Schroeder: | Double | 3,634 | 3,535 | 3,579 | 3,468 |
| | Triple | 3,100 | 3,001 | 3,045 | 2,934 |
| | Quad | 3,290 | 2,989 | 3,033 | 2,922 |
| | Double | 3,743 | 3,644 | 3,688 | 3,577 |
| Carpenter: | Triple | 3,269 | 3,170 | 3,214 | 3,103 |
| | Single | 4,237 | 4,138 | 4,182 | 4,071 |
| | Double | 3,757 | 3,658 | 3,702 | 3,591 |

Apartments (no meal plan included)

| | | |
|--------------------|------------------------|-------------|
| Abbottsford | Studio | \$482/month |
| | One bedroom | 495/month |
| Humphrey | One bedroom | 806/month |
| | Two bedroom | 1,098/month |
| Carmel | Efficiency | 421/month |
| | One bedroom | 540/month |
| Gilman | Studio | 335/month |
| | One bedroom | 438/month |
| Campus Town | Studio | 524/month |
| | One bedroom | 860/month |
| | One bedroom town house | 943/month |
| | Two bedroom | 1,248/month |
| | Two bedroom corner | 1,344/month |
| | Two bedroom coop | 1,443/month |
| | Two bedroom town house | 1,331/month |
| | Two and a half bedroom | 1,472/month |
| | Three bedroom | 1,602/month |
| | Three bedroom corner | 1,743/month |

Meal Plan Only:

| | |
|----------------|---------|
| Traditional 19 | \$1,347 |
| Traditional 14 | 1,248 |
| Block 175 | 1,292 |
| Block 125 | 1,182 |

| | |
|------------------|-------|
| Housing Deposit: | \$200 |
|------------------|-------|

REFUNDS AND ADJUSTMENTS

Students who have prepaid charges but do not register for class 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 an adjustment made to their student account. If that adjustment results in a refund due to the student, proper application must be made with the Bursar's Office to obtain the refund. See the withdrawal section later in this section for a full description of withdrawal procedures.

After the first class, special course fees, Student Activity Fee, Health Service Fee and the UPASS fee are non-refundable. Tuition deposits are non-refundable but are applied toward first term tuition charges. Housing deposits are non-refundable but are applied toward first term housing charges.

All courses for which a student is officially registered as of the close of Late 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. Therefore, to avoid unnecessary fee charges and unnecessary courses with permanent grades of UW, WA or F on the student's permanent record, it is the student's responsibility to be certain that before Late Registration ends, his/her official registration accurately reflects only those courses for which the student plans to enroll. Refunds for tuition and room will be given based on the following schedule:

Refund and Adjustment Schedule

| | |
|--------------------------|--|
| 100 percent refund | Through the close of late registration |
| 80 percent refund | During the second week |
| 60 percent refund | During the third week |
| 40 percent refund | During the fourth week |
| 20 percent refund | During the fifth week |
| NO REFUND | After the fifth week |

Board—Pro-rated number of full weeks remaining in the term as a percent of 16 weeks.

NOTES: Refunds for first time Title IV borrowers will be pro-rated on a weekly basis.

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 their enrollment.

For detailed information on the programs and procedures described in this section and others, which may not be listed here, consult the Office of Student Financial Aid's Web site at www.marquette.edu/financialaid. The Web site is the primary means of communication. Questions can be sent via e-mail to financialaid@Marquette.edu or by contacting the Office of Student Financial Aid, P.O. Box 1881, Marquette University, Milwaukee, WI 53201-1881, or by calling (414) 288-7390.

APPLICATION FOR STUDENT FINANCIAL AID

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 for-

mally admitted into the university, although one certainly can apply for financial aid before acceptance to the university has been granted.

Since most financial aid is awarded to students on the basis of financial need, 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. Students wishing to apply for academic scholarships should complete the scholarship portion of the Application for Admission. All students having completed applications by the scholarship deadline each year will be considered for an Ignatius Scholarship and be notified in early spring. Selection for Ignatius Scholarships is based upon meeting and maintaining 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 contact the Office of Undergraduate Admissions.

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 \$4,050 per year.

Federal Supplemental Educational Opportunity Grant (SEOG): The SEOG is a federal program which provides funds to needy full-time undergraduate students who do not possess a bachelor's degree. These grants may range from \$250 to \$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 \$2,500 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 needy, full-time undergraduate students who 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 half-time 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 is an ample number of jobs for those who want to work. To conduct a successful job search, new students should begin in early August by accessing our Web-based job board. 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. Eligible U.S. citizens must bring a copy of their original birth certificate, Social Security card, or a U.S. passport to the Office of Student Financial Aid. A picture identification card such as a driver's license or Marquette University identification card is also required. Foreign students interested in working on campus should contact the Office of Student Financial Aid for information.

ACADEMIC REGULATIONS

OFFICIAL PUBLICATIONS

This edition of the *Undergraduate Bulletin* governs curricular requirements of all students entering Marquette University undergraduate programs as freshmen or as advanced standing students during the 2004–2005 academic year. Students are held accountable for knowledge of the detailed information and for compliance with the regulations contained in this bulletin and in the *Student Handbook*.

Each student receives a copy of the bulletin, free of charge, upon entrance to the university, and should preserve that copy for reference during his/her entire undergraduate career at Marquette. Additional copies of the bulletin, revised and published annually, will *not* be issued to continuing students free of charge. Should a continuing student misplace the copy of the bulletin he/she received as an entering student, he or she will be able to purchase a bulletin at the Book Marq or the Golden Eagle shops. Copies of the bulletin also are available for reference in the university's libraries, residence halls and school and college offices. For refinement of some of the general policies listed in The University section, and for information on specific regulations, requirements, activities, awards and financial aids in the various divisions of the university, students are requested to refer to the college, school and program sections of this bulletin.

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.

Some departments in the College of Health Sciences issue a student handbook unique to their majors. The student is also governed by the rules and regulations of this handbook.

CREDIT

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

The normal schedule for full-time students in the undergraduate day division is 16 or 17 credit hours, with the exception of students in the ROTC programs, the special requirements of which necessitate carrying more. 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.

AUDIT

Applicants 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. Students may change from credit to audit status during the period extending from the first day of classes through the four weeks following the end of mid-term examinations with the permission of both the course instructor and the dean of the college in which the student is enrolled. Auditors are required to attend all classes but are not required to complete written course assignments or examinations. Audit-only students should refer to the Tuition and Fees section of this bulletin for information on available discounts.

UPPER AND LOWER DIVISION COURSES

Lower division courses are numbered 001-099 and normally are taken by freshmen and sophomores. Upper division courses are numbered 100-199 and normally are taken by juniors and seniors.

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. Such credit, granted only to matriculated students, 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.

ADVANCED PLACEMENT

Matriculated students may be granted advanced placement for college level courses taken in high school. Usually such courses are under the auspices of the Advanced Placement (AP) 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. 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.

ADVANCED PLACEMENT CREDIT AND PLACEMENT

| SUBJECT/SCORE | 1 | 2 | 3 | 4 | 5 |
|---|-----------|-----------|--------------------------------------|---|---|
| American Government and Politics | No Credit | No Credit | No Credit | 3 cr. for POSC 020 with an S | 3 cr. for POSC 020 with an S |
| American History | No Credit | No Credit | No Credit | 6 cr. for HIST 004 and 005 with an S and placement into upper division* courses | 6 cr. for HIST 004 and 005 with an A and placement into upper division* courses |
| Art History | No Credit | No Credit | No Credit | 3 cr. for FIAR 069 with an S | 6 cr. for HIST 007 and 008 with an S |
| Biology | No Credit | No Credit | No Credit | 3 cr. for BIOL 005 with an S | 6 cr. for BIOL 001 and 002 with an S |
| Calculus AB | No Credit | No credit | 4 cr. for MATH 080 with an S | 4 cr. for MATH 080 with an A | 4 cr. for MATH 080 with an A |
| Calculus BC | No credit | No credit | 8 cr. for MATH 080 and 081 with an S | 8 cr. for MATH 080 and 081 with an A | 8 cr. for MATH 080 and 081 with an A |
| Chemistry | No Credit | No Credit | 4 cr. for CHEM 001 with an S | 8 cr. for CHEM 001 and 002 with an S | 8 cr. for CHEM 001 and 002 with an A |
| Comparative Government and Politics | No Credit | No Credit | No Credit | 3 cr. for POSC 040 with an S | 3 cr. for POSC 040 with an S |
| Computer Science A | No Credit | No Credit | 3 cr. for COSC 051 with an S | 3 cr. for COSC 051 with an A | 3 cr. for COSC 051 with an A |
| Computer Science AB | No Credit | No Credit | 6 cr. for COSC 051 and 055 with an S | 6 cr. for COSC 051 and 055 with an A | 6 cr. for COSC 051 and 055 with an A |
| English Language/Literature and Composition | No Credit | No Credit | No Credit | 3 cr. for ENGL 001 with an S | 6 cr. for ENGL 001 and 002 with an S |
| Environmental Science | No Credit | No Credit | No Credit | 3 cr. for PHYS 009 with an S | 3 cr. for PHYS 009 with an S |
| European History | No Credit | No Credit | No Credit | 3 cr. for HIST 002 with an S and placement into upper division* courses | 3 cr. for HIST 002 with an A and placement into upper division* courses |
| French, or German Language | No Credit | No Credit | Placement into course 003 | 4 cr. for course 010 with an S | 3 cr. for course 040 with an S |
| French Literature | No Credit | No Credit | Placement into course 003 | 3 cr. for course 040 with an S | 3 cr. for course 198 with an S |
| Human Geography | No Credit | No Credit | No Credit | 3 cr. for ANTH 069 with an S | 3 cr. for ANTH 069 with an S |
| Latin | No Credit | No Credit | Placement into Latin 003 | 3 cr. for Latin 004 with an S | 3 cr. for Latin 055 with an S |
| Macroeconomics | No Credit | No Credit | 3 cr. for ECON 044 with an S | 3 cr. for ECON 044 with an S | 3 cr. for ECON 044 with an A |
| Microeconomics | No Credit | No Credit | 3 cr. for ECON 043 with an S | 3 cr. for ECON 043 with an S | 3 cr. for ECON 043 with an A |
| Music Theory | No Credit | No Credit | No Credit | 3 cr. for MUSI 051 with an S | 3 cr. for MUSI 051 with an S, plus 3 cr. for MUSI 069 with an S |
| Physics B*** | No Credit | No Credit | No Credit | 6 cr. for PHYS 001 and 002 with an S | 6 cr. for PHYS 001 and 002 with an S |
| Physics C*** (mechanics) | No Credit | No Credit | No Credit | 3 cr. for PHYS 003 with an S | 3 cr. for PHYS 003 with an S |
| Physics C*** (electricity and magnetism) | No Credit | No Credit | No Credit | 3 cr. for PHYS 004 with an S | 3 cr. for PHYS 004 with an S |
| Psychology | No Credit | No Credit | No Credit | 3 cr. for PSYC 001 with an S | 3 cr. for PSYC 001 with an S |
| Spanish Language | No Credit | No Credit | Placement into course 003 | 4 cr. for course 010 with an S | 3 cr. for course 082 with an S |
| Spanish Literature | No Credit | No Credit | Placement into course 003 | 3 cr. for course 198 with an S | 3 cr. for course 090 with an S |
| Statistics | No Credit | No Credit | No Credit | 3 cr. for MATH 060 with an S | 3 cr. for MATH 060 with an S |

* Upper division classes are junior and senior level courses.

** Those students planning to attend medical or dental school are advised not to accept AP credit or placement in physics, and should consult with the health professions adviser.

Science and engineering majors should note that credit received does not include lab credit. Labs must be completed at Marquette.

Note: AP code is 1448.

Revised Dec. 2003

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. Marquette 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 permanent record and indicated as an S grade (satisfactory), and therefore will not affect the student's quality point average.

General information on CLEP costs and test centers may be obtained from The College Board www.collegeboard.com/clep.

APPROVED CLEP SUBJECT EXAMINATIONS

| SUBJECT EXAMINATION | SCALED SCORE REQUIRED | MARQUETTE EQUIV. COURSE | HOURS OF CREDIT |
|--|-----------------------------|----------------------------|--------------------|
| GENERAL BIOLOGY | 60 | BIOL 001 AND 002 | 6 |
| | 50 | BIOL 005 | 3 |
| GENERAL CHEMISTRY | 50 | CHEM 001 AND 002 | 8 |
| ANALYSIS AND INTERPRETATION OF LITERATURE | 50 | SOPHOMORE LITERATURE | 3 |
| AMERICAN LITERATURE | 50 | SOPHOMORE LITERATURE | 3 |
| ENGLISH LITERATURE | 50 | SOPHOMORE LITERATURE | 3 |
| WESTERN CIVILIZATION 1 | 60 | HIST 001 | 3 |
| WESTERN CIVILIZATION 2 | 60 | HIST 002 | 3 |
| HISTORY OF THE U.S. 1 | 55 | HIST 004 | 3 |
| HISTORY OF THE U.S. 2 | 55 | HIST 005 | 3 |
| INFORMATION SYSTEMS AND COMPUTER APPLICATIONS | 55 | COSC 050 | 3 |
| COLLEGE ALGEBRA | 55 | MATH 020 | 3 |
| CALCULUS WITH ELEMENTARY FUNCTIONS | 55 | MATH 080 | 4 |
| AMERICAN GOVERNMENT | 50 | POSC 020 | 3 |
| INTRODUCTION TO PSYCHOLOGY 1 | 55 | PSYC 001 | 3 |
| INTRODUCTORY SOCIOLOGY | 50 | SOCI 001 | 3 |
| PRINCIPLES OF MICROECONOMICS | 55 | ECON 043 | 3 |
| PRINCIPLES OF MACROECONOMICS | 55 | ECON 044 | 3 |
| PRINCIPLES OF MANAGEMENT | 55 | MANA 156 | 3 |
| PRINCIPLES OF MARKETING | 55 | MARK 140 | 3 |

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.

PLACEMENT IN FOREIGN LANGUAGE COURSES

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.

Students in the College of Arts and Sciences, College of Communication, international business majors in the College of Business Administration, 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.

FOREIGN LANGUAGE REQUIREMENT

| College | Majors With a Requirement | Requirement |
|-------------------------|--------------------------------|---|
| Arts & Sciences | All | B.A.: 0-14 cr. hrs./ 0-4 courses B.S.: 0-8 cr. hrs./ 0-2 courses |
| Business Administration | International Business | 0-6 courses (courses 001-182) |
| Communication | All | 0-8 cr. hrs./0-2 courses |
| Engineering | None | 0 cr. hrs. |
| Health Sciences | Audiology and Speech Pathology | 0-8 cr. hrs./0-2 courses |
| Nursing | None | 0 cr. hrs. |
| Professional Studies | None | 0 cr. hrs. |

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 a 001: Elementary Language course.
- 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 French, German or Spanish 001, but have studied two or more years of the language at the high school level, must register for the 009: Intensive Elementary course if they plan to continue study in that language. The 001: Elementary 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 Classical Greek, Latin, Italian, or Japanese in high school, and who plan to continue with the study of that language should register for a 001: Elementary Language course. Students with three years or more of high school study should register for a 003: Intermediate Language course.
- 5) Students who are native or near-native speakers of French, German, Italian, Japanese, or Spanish, and who plan to continue study of that language must consult with the Department of Foreign Languages and Literatures before registering for a foreign language course. Native speakers of other languages should consult with the College of Arts and Sciences regarding possible exemption from the foreign language requirement.
- 6) 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.
- 7) Students who have college credit for a foreign language course should consult with the Registrar and their College office regarding the transfer of foreign language credit.
- 8) 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' Web site at www.marquette.edu/foia 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.

Further information on the procedures and instructions regarding the WebCAPE Placement Examination can be found on the Department of Foreign Languages and Literatures' Web site at www.marquette.edu/foia.

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 010: Concentrated Intermediate in French, German, or Spanish, 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 010). If a student places in 040, 082 or 182 in French, German, or Spanish, 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 as FREN 005, SPAN 005, etc. 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 college-level 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) and;
- 4) the student may not have previously audited a college course in the language or enrolled in, and then withdrew from, a course in the language after the third week of the term.

UNDERGRADUATE STUDENTS IN GRADUATE COURSES

An undergraduate senior may register for a 200-level 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 has approval from the Graduate School. To register for a graduate course, an undergraduate student must complete the Request for Permission to Enroll in a Graduate Course form, available from the Graduate School office or on the Graduate School Web page at www.grad.mu.edu/forms. The student is responsible for securing the necessary signatures (including the course instructor, the graduate department chairperson and the dean of his/her undergraduate college or school), returning the completed form to the Graduate School, then registering for the course using the CheckMarq system.

Undergraduate students taking graduate level courses or upper-division (100-level) courses (any of those designated by a # symbol in the registration *Schedule of Classes*) 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 S/U or audit option unless that is the only grading option available for the course. Students are not eligible to receive CD or D grades.

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

UNDERGRADUATE QUALITY POINTS AND GRADING SYSTEM

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

All students must earn at least a C (or 2.000) average in courses actually taken at Marquette. If a student's quality 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 Scholastic Censure section in this bulletin.)

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

| <i>Grade</i> | <i>Achievement</i> | <i>Quality Points</i> |
|--------------|--------------------|-----------------------|
| A | Superior | 4 |
| AB | | 3.5 |
| B | Good | 3 |
| BC | | 2.5 |
| C | Satisfactory | 2 |
| CD | | 1.5 |
| D | Minimum passing | 1 |
| F | Failing | 0 |

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

Junior and senior students are given an option to elect one course per term (to a maximum of four courses) for which only an S or U grade is assigned:

| <i>Grade</i> | <i>Achievement</i> |
|--------------|--|
| S | Satisfactory completion of the course, equivalent of C work or better. Full credit earned, but the grade does not affect the quality point average |
| U | Unsatisfactory completion of the course. No credit earned and the grade does not affect the quality point average |

The following letter grades are used to indicate circumstances involving audits, incompletes, absences and withdrawals:

| <i>Grade</i> | <i>Circumstance</i> |
|--------------|--|
| AU | Audit (no credit). |
| I | Assigned by the instructor, normally on a pre-arranged basis, to allow completion of course assignments other than the final examination. It is understood that the student's performance in the course must merit this special concession. If the instructor judges that the student has not merited the I grade, he or she will assign an F grade if the missing work is significant enough to deserve an F, or, alternatively, a passing grade which reflects both the quality of the work completed and the significance of the work which has not been completed. |
| X | Assigned by the instructor 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. If the two conditions do not exist, the student is assigned the grade of F immediately. A student receiving the grade of X must file an explanation for his or her absence in writing to the dean of the student's college. |
| IX | Issued by the instructor to a student who is incomplete in the course work and absent from the final examination but who otherwise meets the criteria for the I grade and the X grade. (A student not qualifying will be assigned the grade of F) |
| W | Official withdrawal, initiated by the student, with approval of dean or director. |
| UW | Unexcused withdrawal from one or more courses. |
| WA | Student was withdrawn from the course for excessive absences. (The college office decided that the student—whether passing or failing at the time—was not allowed to return to the class.) |

Clearance of grades I, X and IX is effected through the office of the dean of the college, school or program which offers the course. These grades must be cleared by the date specified in the academic calendar for the term following the term in which the grade was assigned or they will automatically become the grade of F (unless the dean has specifically granted a petition for extension of the deadline date). For those continuing students who entered under the previous grading policy, the I, X, and IX grades will remain such on the permanent record. But because these grades denote that the student has not fulfilled all course requirements, the university views these grades, when not removed by the student, with the same seriousness as the grade of earned F.

The letter grades involving withdrawal (i.e., grades with a W) do not imply any loss of quality points and therefore do not affect the student's quality point average.

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.

S/U 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 an S or U 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 and described each term in the *Schedule of Classes*. Arrangements to take a course under the S/U option must be made in person, in the Office of the Registrar, and arrangements must be completed no later than the close of late registration.

After the close of late registration, the student does not have the option of changing from S/U to regular grading or from regular grading to S/U grades.

S/U GRADES

The grades S and U are also awarded routinely to all students enrolled in certain internship type courses such as student teaching and in some practicums. S grades are also routinely awarded in the granting of credit through the CLEP examinations, and S grades may be a student's choice in accepting credit through the Advanced Placement Program.

REPEATED COURSES

Students who are required to repeat a course because of failure to achieve a required minimum grade for a specific major or minor field, or who choose to repeat a course for other reasons, must file with the office of their dean a request to repeat the course. The repeat course must be identical to the original course in title, subtitle, and credits. Substitution of one course for a different course is never permitted.

Credit hours earned in a repeated course are only given once. All previous courses and grades remain on the student's permanent record and appear on the transcript. Beginning with courses repeated during the Fall Term 1999, the grade in the original course is not included by Marquette in the calculation of the students cumulative quality point average. Cumulative quality point average is adjusted at the time the repeated course grade is recorded. If a student withdraws from the repeated course, the earlier grade will remain in the students cumulative quality point average.

Students may repeat a course regardless of the original grade earned. Academic programs may specify courses that normally are not allowed to be repeated, or may identify limits on the number of times specific courses in their curriculum may be repeated. Otherwise, there is not a limit on the number of times a student may repeat a course. Students may not exercise the S/U option for a repeated course. Courses repeated at other institutions will not be used to replace grades earned at Marquette.

APPEALS PROCEDURE

Undergraduate students may appeal a grade which the student believes to be in error. The student is expected, first of all, to exhaust all possibilities of resolving the problem with the pertinent instructor. If this does not lead to resolution, the student may initiate, in writing, the formal procedure for appealing the grade to the chairperson of the department or, in schools with no departmental structure, to the dean, stating the reasons he or she believes the grade should be changed. The chairperson or the dean will employ the appeals procedure which has been established by the department or college to ensure a fair consideration of the student's appeal. Normally no formal procedure of appeal will be given consideration if the documents are submitted later than the final day officially scheduled for the removal of incompletes, approximately four weeks after the beginning of the regular academic term immediately following the term in which the grade was assigned. The final disposition of the appeal is reserved to the dean of the college or director of the program in which the course was taken.

EXAMINATIONS AND GRADE REPORTING

MIDTERM ASSESSMENT

There is a midterm assessment of the work of all undergraduate students in their undergraduate courses. However, the assignment of midterm grades in courses numbered 195-199 and those designated "Possibly No Midterm Grading" in the *Schedule of Classes* is at the option of the instructor, who will make known to the class at the beginning of the term whether or not such grades will be assigned.

University policy does not require a formal midterm examination. It is not unlikely, however, that many instructors administer such a test in their undergraduate courses.

Undergraduate students are expected to obtain their midterm grade information via Marquette's CheckMarq Information System on the Internet, as described in the CheckMarq section of this bulletin and in the *Schedule of Classes*.

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.

A student who misses a final examination risks an F grade for the course. If he or she meets the pertinent criteria detailed in this section of the bulletin under "Undergraduate Quality Points

and Grading System,” he or she will be assigned the grade of X; he or she may be permitted to write a late examination to remove the X if the absence was for a valid reason and was reported in accordance with the norms established by the dean of the student’s college.

FINAL GRADES

All students are expected to obtain their final grade information via Marquette’s CheckMarq information system on the Internet, as described in the CheckMarq section of this bulletin and in the *Schedule of Classes*.

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 adroitly handling their life responsibilities, achieve and maintain high scholastic standards. Students in the College of Professional Studies and Part-time Studies are inducted annually. For information, contact Part-time Studies at (414) 288-3153.

ALPHA SIGMA NU

Founded in 1915, Alpha Sigma Nu honors students who have maintained high academic standards as well as a demonstrated commitment to service and loyalty to the ideals of Jesuit education. Membership requirements include junior/senior standing and a Q.P.A. within the top 15 percent of their class. Graduate students who have completed one-half of the credit requirements are eligible and subject to the same criteria. Of the pool of eligible students, only four percent of the students from each class within the various colleges and programs of the university will be invited to membership.

Alpha Sigma Nu boasts 32 student chapters with 59,000 alumni members from Jesuit institutions of higher education throughout the United States, Canada and Korea. The society maintains ongoing service and professional projects, provides mentoring and networking possibilities for its members, aids 32 Jesuit institutions of higher education through scholarships, and coordinates four national book awards on an annual basis. Alpha Sigma Nu Alumni Clubs in Boston, Buffalo, Chicago, Denver, Kansas City, Omaha, New York City, Southeastern Wisconsin, and Washington D.C. encourage our alumni’s lifelong commitment to the AΣN values of scholarship, loyalty and service, and to the ideals of Jesuit education.

Founded at Marquette University in 1915, Alpha Sigma Nu’s headquarters remain on the Marquette campus. For information contact the office at (414) 288-7542 or visit the Web site at 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 culture. There are only 270 chapters, and Marquette’s Zeta chapter dates from 1971. Membership requirements typically include good (faculty-attested) academic character and a Q.P.A. 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 College of Arts and Sciences for the name of the current secretary.

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. Exceptions to this rule may occur, as determined by the dean or director. It is to be expected that 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 terms at a time normally must meet the requirements in the bulletin issued for the year in which they return to the university. *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 program of studies; *however, it is ultimately each student’s responsibility to know and fulfill the requirements for graduation specified for the selected program.*

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

In all colleges and programs a minimum quality point average of 2.000 must be earned for graduation.

1. The candidate for a degree in arts and sciences or communication must earn 128 credit hours and a minimum of 256 quality points (2.000 quality point average). In addition, an arts and sciences candidate must achieve a 2.000 quality point average in all courses in his/her major or minor.

In business administration (non-accounting), 129 credit hours (includes four one-credit S/U courses) and 256 quality points (2.000 quality point average) are required. In addition, a candidate must achieve a 2.000 quality point average in all courses in the College of Business Administration. A candidate majoring in accounting must earn 129 credit hours with a 2.500 average in all courses taken in the college. At least 50 percent of the required business credits must be taken at Marquette University.

In education, students must have a minimum of a 2.500 overall quality point average and a minimum of a 2.750 quality point average in major courses, each additional area of licensure, and in education course work.

In engineering, 130 to 135 semester hours (depending upon which major is chosen) and a 2.000 quality 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 health sciences, the candidate for a degree with a major in biomedical sciences, clinical laboratory science, exercise science, or speech pathology and audiology must earn 128 credit hours and a minimum of 256 quality points (2.000 quality point average.) For athletic training, 130 credit hours and 260 quality points are required. For dental hygiene, 126 credit hours and 252 quality points are required. For exercise science, 128 credit hours and 256 quality points are required. For physician assistant studies, undergraduates must meet the graduation requirements of the biomedical sciences major and must complete in the professional phase 131 credit hours and 260 quality points required for the degree of master of physician assistant studies. For physical therapy, undergraduates must meet the graduation requirements of their selected major, and must complete 49 credit hours of pre-professional course work; in the professional phase, 123 credit hours and 246 quality points are required for the doctor of physical therapy. In addition, a health sciences candidate must achieve a 2.000 quality point average in all courses in his/her major.

In nursing, 128 credit hours and a minimum of 256 quality points (2.000 quality point average) are required.

In professional studies, 126 credit hours and 252 quality points (2.000 quality point average) are required.

2. Once a student has gained senior classification (as defined in this bulletin in terms of credit hours accumulated), a minimum of 30 hours of the remaining course work normally must be completed at Marquette University. Clinical laboratory science students must spend the second term of the junior year in residency.

3. A minimum of 32 hours of upper division work normally must be completed at Marquette University.

4. A minimum of 15 credit hours in the major normally must be completed at Marquette University.

5. A student who interrupts residence for two or more consecutive terms normally must meet the graduation requirements which prevail at the time of readmission.

6. 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.

7. The student must file a formal application for a degree at the college office.

8. May graduates must attend Commencement exercises. Permission to be absent may be secured only for serious reasons by writing before May 1 to the office of the student's dean.

GRADUATION HONORS

The quality point system is used to compute graduation honors. The computation is made by dividing the total number of quality points earned at Marquette University by the total number of quality point hours earned. To graduate with honors, a candidate must have earned at least 60 quality 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 inscribed on diplomas, noted in the published lists of graduates at Commencement, and recorded on the student's transcript.

FAMILY EDUCATION RIGHTS AND PRIVACY ACT

In compliance with the Family Educational Rights and Privacy Act, Marquette University notifies its students of their rights to inspect, amend and prevent disclosure of their education records. Marquette's policy regarding education records is printed in the *At Marquette* student handbook and copies may be obtained from the Office of Student Development in the Alumni Memorial Union, 329.

ATTENDANCE

Students are expected to attend all exercises of the courses in which they are registered and to be on time. Any absence, regardless of the reason, will prevent the student from getting the full benefit of the course. Instructors may include class attendance as a measure of academic performance, and inexcusable absences may render a student liable to censure. Students must comply with the absence regulations of the college or school in which the course is offered. An instructor's syllabus should give particular directions regarding class attendance. Students who miss an exam or a deadline for an excusable reason should contact their instructor as soon as possible. (Students who are absent from class for a week or more for an excusable reason, such as a major illness, should inform the college in which they are enrolled.)

CLASSIFICATION

A matriculated (a student who has declared degree candidacy) 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. A non-matriculated undergraduate student is not included under any of the above classifications but is categorized as an unclassified (because non-degree) student.

NON-DEGREE STUDENT ACADEMIC REGULATIONS

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 office of the dean/director is required before students may exceed this limit.
3. 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.
4. Normally, students who are accepted and enroll with non-degree status must complete at least 12 credits before applying for degree status.
5. A 2.000 grade point average in Marquette University course work is a minimum requirement to be considered for degree status.
6. At the time non-degree students petition for degree status, they must comply with all regulations regarding credential submission as outlined for degree candidates in the Admissions Procedures section of this Bulletin.
7. 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.

SCHOLASTIC CENSURE

Quality Point Deficiency—All students are expected to maintain at least a C (2.000) Q.P.A. in Marquette work.

All students who do not maintain at least a 2.000 cumulative quality point average in Marquette work are subject to an Executive Board review and possible academic dismissal at the discretion of the student's college or program. However, all students who do not maintain at least a 2.000 cumulative average in Marquette work and whose Q.P.A. falls within the following categories will be reviewed by the Executive Board and are subject to possible academic dismissal.

| <i>Degree Hours Earned</i> | <i>Student's Cumulative Quality Point Average</i> |
|----------------------------|---|
| 0-34 | Less than or equal to 1.500 |
| 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 quality point deficiency or excessive failing grades the Executive Board, through the dean or director, 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 Executive Board may be required to withdraw for academic reasons.

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

WITHDRAWAL FROM COURSES

A student who wishes to withdraw from one or more courses, but who will still be attending at least one other course during the term, must contact his or her college office.

A student may obtain permission to withdraw from a course with a “W” grade during the period extending from the day following the close of late registration until the date specified in the academic calendar. Before withdrawal, a student should confer with the office of the dean or director to learn what procedures he or she is expected to follow. After this period, a student will no longer be given permission to withdraw from courses except for serious non-academic reasons (e.g., injury, family crisis). A student may, with the consent of the instructor, continue to attend a class from which he or she has withdrawn and may, with the agreement of the instructor and the dean, change to auditor status unless a tuition refund for the course has been received.

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 required.

WITHDRAWAL FROM THE UNIVERSITY

A student who is enrolled for one or more classes but decides to completely discontinue study for the term must formally withdraw from the university. Application for withdrawal must be obtained from the office of the student's academic dean.

After obtaining the Official Withdrawal form, a student who wishes to withdraw from the university during the term will personally confer with the dean at the time of such action.

If a student withdraws from the university during the term without the permission of the dean, he or she receives the grade UW (unexcused withdrawal) in each course, and the grade must be cleared by the dean before the student is eligible for readmission.

When the student obtains the Official Withdrawal form from the academic dean, the student will be informed whether the student must confer with any offices in addition to the dean's.

Withdrawal will not be processed by the university or considered officially complete until the withdrawal form with all necessary signatures is returned by the student to the office of the academic dean.

The only exception permitted to the policies and procedures described above applies to students who have classes only in the evening (after 5 p.m.). Such students do not have to physically appear at the academic dean's office; written notification of intent constitutes acceptable means of compliance with university policy and procedure.

In cases of withdrawal because of disciplinary reasons, the student must be cleared by the academic dean and the dean of students to be eligible for readmission.

A student who intends to withdraw from the university after the close of a term is strongly advised to confer with the dean.

All courses for which a student is officially registered as of the close of Late 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. Therefore, to avoid unnecessary fee charges and unnecessary courses with permanent grades of UW, WA or F on the student's permanent record, it is the student's responsibility to be certain that before Late Registration ends, his/her official registration accurately reflects only those courses for which the student plans to enroll.

ACADEMIC DISHONESTY

It is not feasible to attempt to develop a list of all conceivable examples of academic dishonesty, but it may be helpful to list a few and to note that they all involve an attempt to deceive, to distort perceptions of reality, to gain a record of academic accomplishment greater than earned. All who are parties to the deceit are involved in academic dishonesty. Most acts of academic dishonesty involve cheating on examinations or reports in one way or another, improperly obtaining examination questions, plagiarism, forgery, falsification of records or impersonation of a candidate taking an examination.

Students who engage in academic dishonesty, whenever that may be, shall be subject to appropriate university penalties. Penalties ranging up to an F in the course in which the dishonesty occurs can be imposed by the dean of the college or school in which the course is offered. Additional penalties, if they are warranted, ranging up to expulsion from the university, can be imposed by the dean of the college or school in which the affected student is enrolled. If an appeal against the imposition of a penalty for academic dishonesty is taken beyond the college or school in which it was imposed, it should be directed to the Office of the Provost.

ACADEMIC FACILITIES AND RESOURCES

LIBRARIES OVERVIEW

The University Libraries support the teaching, research, and service mission of Marquette University by providing access to recorded knowledge through their collections, services, cooperative programs and connections to world wide resources. A full description of resources, hours, news and services is found at the Libraries' Web site, (www.marquette.edu/library/).

Collections of more than 1.5 million volumes of books and 5,200 print subscriptions are housed in four facilities: the new John P. Raynor, S.J., Library, Memorial Library, Science Library, and the Law Library. The libraries' shared online catalog, MARQCAT, includes all book and periodical holdings with current locations and circulation status.

Most library services and online research databases are available to students 24/7 from both on- and off-campus locations. Class Reserve readings are digitized for online access whenever possible. A Cooperative Access Program (CAP) with the UW-Milwaukee and the Medical College of Wisconsin libraries provide monitored loan privileges for Marquette students with an InfoPass issued by Raynor's information desk. The Milwaukee County Federated Library System, including the Central Library, just four blocks from campus, also lends to Marquette students. Above all, service-oriented staff members are committed to guiding and teaching users throughout the research process.

The University Libraries combine state-of-the-art technologies with a repository of information and wisdom in an atmosphere of service and learning. The Raynor's first floor is open 24/7 when classes are in session, offering comfortable and safe late-night study space. Special extended space is available during final exams. Library hours during the summer, intersessions, and holidays are posted and updated regularly on the 24-hour recorded message at (414) 288-1530.

The library online catalog, MARQCAT, provides access to book and periodical holdings, electronic indexes to journal literature, and directional information on library hours, staff, programs, and services.

JOHN P. RAYNOR, S.J., LIBRARY

Opened in August 2003, the new Raynor Library holds a commanding position at the 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 to, and delivery of, information. The Library offers over 225 online databases, thousands of books in digital format, and an ever-growing (over 14,000) collection of fulltext online newspapers, journals, and magazines. The primary service point in Raynor is the two-level Information Commons (IC), with over 200 networked PCs, multimedia hardware and software, comfortable individual and small group study spaces, and an Information Desk that is open 104 hours weekly.

Additional features of Raynor include: Reference Collections, Media Desk, Browsing Collection, Funding Information Center, and circulating laptops with wireless network access. A conference center accommodating large groups and video conferencing, the Writing Center, and the Center for Teaching and Learning are also located in the facility. The second-level bridge connection to Memorial Library features a 4,800 square foot café with casual seating, popular reading materials, and wired and wireless network connections.

Raynor Library also includes the Department of Special Collections and University Archives and its comfortable research/exhibit area on the third floor. Its archival and manuscript collections and over 6,000 rare book holdings include the archives of Marquette University; the papers of faculty, students, staff, and alumni; and major collections relating to Catholic social action in the 20th century. These include large collections for the following individuals and organizations: Dorothy Day and the Catholic Worker movement, the National Catholic Conference for Interracial Justice, the Catholic Association for International Peace, Sister Margaret Ellen Traxler, the Milwaukee Council on Urban Life, Monsignor Luigi G. Ligutti, and the National Catholic Rural Life Conference.

The original manuscripts of J.R.R. Tolkien and the extensive Bureau of Catholic Indian Missions Records are also available for research use.

MEMORIAL LIBRARY

The majority of the Libraries' book and journal collections are housed in Memorial Library, accessed via the 2nd floor footbridge and café. Memorial Library is open 104 hours per week with its collections on open shelving — journals on the lower level compact shelving and books on floors 1-5. The facilities in this library include study rooms for faculty and graduate students.

SCIENCE LIBRARY

The Science Library, on 16th St., is open Monday through Saturday, approximately 55 hours. Housed here are some science materials and some stored, older library collections. The online catalog is always current with location information.

For more information on the University Libraries:

- Libraries' Web site www.marquette.edu/library/
- Map showing campus libraries: www.marquette.edu/places/tour_lb.html
- AskUs! Phone, e-mail, or live online information services: www.marquette.edu/library/askus/
- Hours: www.marquette.edu/library/information/libhours.html 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 faculty and students of the Marquette University Law School. In addition the Law Library resources and librarians are available to the University community and the local and alumni legal communities.

The Law Library is located in the Legal Research Center that is attached to Sensenbrenner Hall, the home of the Marquette University Law School. It is the largest legal research facility in southeastern Wisconsin with a collection of over 308,000 volumes and microform equivalents representing 220,000 titles and 6,400 subscriptions, as well as access to hundreds of online legal resources. Open seven days a week, the library staff of 18 provides service to faculty and students, the local bench and bar, as well as the general public.

The Law Library maintains a comprehensive print collection of primary legal materials from all jurisdictions in the United States (including being a depository of federal government information resources), as well as maintaining a growing collection of international and comparative legal materials. In addition, the Law Library subscribes to several premiere legal databases including Lexis-Nexis, Westlaw, LOISLAW, and Hein Online, and is constantly evaluating new services, such as the highly respected BNA electronic information databases.

The Law Library maintains two computer labs and an open computer work area that provide law students with access to word processing, computer-assisted legal research and instruction, and Internet access. One of the computer labs is named the "Victor and Isabel Miller Computer Classroom" in honor of the donor who provided an endowment to, among other things, create a classroom for group training as well as general law student use. The Miller Classroom has seating for 12, a "smart podium" and data projector, and a sound system to allow for guided teaching through online services, video and audio over the Internet, or videotape / DVD presentations. In addition to computer workstations, the Law Library has a wireless network that allows students with laptops and network cards to access the law school and/or the university computer network. Law students may borrow network cards for use in their personal laptops, or they may check out one of several laptops available for loan. Other computer workstations are scattered throughout the facility to provide any user with access to the shared library catalog, MARQCAT, and to other research-oriented online services.

The Law Library is a focal point of legal research and group or individual study; it is also a place to receive training and advice in the use of the myriad legal resources available in the academic environment.

EDUCATION RESOURCES CENTER

The School of Education maintains an Education Resources Center in the Walter Schroeder Health Sciences and Education Complex, 199. Collections of the ERC include a large collection of current children's and young adult books (cataloged in the Marqcat system); sample copies of elementary and secondary school textbooks; audio-visual material and equipment, including educational videos. Materials in the ERC may be used by any student, faculty or staff in the university and by public and private teachers in the Milwaukee area, with priority for the needs of students enrolled in undergraduate and graduate studies in the School of Education. Special permission may be granted for use of materials by persons not otherwise connected with the university.

HAGGERTY MUSEUM OF ART

The Patrick and Beatrice Haggerty Museum of Art opened in 1984 as a home for the university's permanent collection and a center for the fine arts on the Marquette campus. The collection comprises approximately 9,000 works of art from the 16th through the 20th centuries in the areas of painting, works on paper, sculpture, decorative arts, Asian and tribal arts. The museum serves the Marquette community and the city of Milwaukee with changing exhibitions, lectures, concerts, performances, tours and special events.

Education is fundamental to the mission of the Haggerty Museum which aspires to stimulate lifelong interest in the fine arts. Programming includes lectures by artists, scholars and critics; symposia; teacher workshops; and tours. Through educational programs planned in conjunction with academic disciplines at Marquette and with area schools, the museum offers learning opportunities for all ages.

The museum's exhibition schedule incorporates 10 to 12 special exhibitions annually including those organized by the Haggerty Museum staff, traveling exhibitions and interpretations of the permanent collection. The museum's program of innovative contemporary and historical exhibitions extends to nontraditional and experimental developments in the arts and reflects the cultural diversity of our world.

Admission to the museum is free. Hours are 10 a.m. to 4:30 p.m. Monday through Saturday, 10 a.m. to 8 p.m. Thursday, and noon to 5 p.m. Sunday. The museum is accessible to people with disabilities. For information or free tours, call (414) 288-1669.

HARTMAN LITERACY AND LEARNING CENTER

The Hartman Literacy and Learning Center is a facility within the School of Education which supports undergraduate and graduate literacy-related programs. The center library houses a children's literature collection which is used by School 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 160 (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.

INSTRUCTIONAL MEDIA CENTER

Located in Johnston Hall, the Instructional Media Center provides a wide range of media support and educational technology to the university. Video, multimedia and still photography production for classroom and distance learning support is the center's primary responsibility. Audiovisual equipment—from overhead projectors to video/data display systems—is available for campus instructional use. In addition, the center administers nearly 100 technology-rich presentation classrooms.

The IMC also maintains facilities that provide unique educational experiences to Marquette students of Broadcast and Electronic Communications. These include two broadcast quality television studios, three audio studios and numerous digital editing suites. WMUR and MUTV, the campus radio and television stations, operate out of facilities managed by the IMC. These closed circuit, student operations are open to all students of the university.

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. Examples include the Center for Intelligent Control Systems, the Center for Mass Media Research, the Center for Family Business, the National Sports Law Institute, the Nursing Center, the Parenting Center, the Les Aspin Center for Government, the Wisconsin Center for Addiction Studies and the Center for Highway and Traffic Engineering. The Graduate School maintains a list of currently active centers and institutes.

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.

PERSONAL RESOURCES AND FACILITIES

ALUMNI MEMORIAL UNION

The Alumni Memorial Union (AMU) is the university's community center providing students, alumni, faculty, staff, and guests with a comfortable environment for a variety of activities and meetings, as well as a place to relax, eat, or study. Union facilities include three dining service areas featuring a wide variety of cuisines (Brew Bayou coffee shoppe, Lunda dining room, Marquette Place), a game room in Brooks Lounge with pool tables and a dart board, ticket sales service, a retail shop featuring Golden Eagle memorabilia, University Information Center, a post office, a US Bank branch, two ATM machines, a chapel, meeting rooms, lounges, and other facilities which enhance the out-of-classroom experience. Programs held in the Alumni Memorial Union and Union Sports Annex, along with the Varsity Theatre and Weasler Auditorium, include lectures and seminars, concerts, receptions, films, dances, dinners, bowling and other recreational events.

The Alumni Memorial Union houses the AMU administration and Event Planning Services, along with offices of the vice-president for Student Affairs, Campus International Programs, University Special Events, University Ministry, the Marquette University Student Government (MUSG), LEAD Center (Leadership Education and Development), Student Educational Services, Student Development, student organizations, the Golden Eagle Spirit Shop, US Bank and the Marquette Card office.

Reservations for events, meeting space, and conferences can be made by calling AMU Event Planning Services at (414) 288-7202. Union facilities may be rented by students, alumni, and employees for private use.

The AMU Event Planning Services offers complete catering options for events of all sizes. Catering services are available for use by university groups or private parties. For more information, go to www.marquette.edu/amu/planevent!. The Union Sports Annex is a part of AMU facilities and is located at 804 N. 16th St.

ATHLETICS

More than 230 Marquette University students, male and female, are active in intercollegiate sports at the NCAA Division I level. Seven sports are available for women: basketball, cross country, indoor and outdoor track, tennis, volleyball, and soccer. Seven sports are available to men: basketball, cross country, golf, indoor and outdoor track, soccer and tennis.

The eligibility rules for participation in these sports are available from the Intercollegiate Athletics office in the Al McGuire Center.

CAMPUS INTERNATIONAL PROGRAMS

The Office of Campus International Programs (OCIP) assists students from other countries to accomplish the many changes of systems necessary for success in their Marquette experience and also arranges for cross-cultural experiences on campus for the educational benefit of Americans as well as students from other countries.

Prospective undergraduate students who are not U.S. citizens or immigrants should contact OCIP for appropriate information and application materials. OCIP is the worldwide marketing, recruitment and admissions office for nonimmigrant undergraduate applicants. OCIP is also the

office which may issue the federal documents required for most students, faculty and researchers to apply for United States visas to enter this country for enrollment at Marquette.

New international undergraduate and graduate students are to report to OCIP as soon as they arrive at the university. OCIP administrators are the Designated School Officials (DSOs) under federal regulations to act on behalf of the university in numerous federal procedures for international students, faculty and researchers. These administrators are also the Responsible Officers (ROs) under federal regulations to operate Marquette's exchange visitor program. Enrolled students with certain visa statuses will need the involvement of OCIP in many federal procedures such as extension of stay in the United States, return to this country after a visit abroad, employment and practical training applications, and allowance for part-time enrollment in certain situations.

Specialized arrival, housing and orientation programs are provided for new international students prior to the beginning of the fall and spring terms. Ongoing orientation programs are offered throughout the year along with assistance to individual students regarding personal situations, government regulations and procedures, campus and community involvement, and a wide range of other cross-cultural issues. Marquette's International Center is a branch of OCIP dedicated to the social interaction and cross-cultural education of students from around the world including Americans. OCIP also administers two international group health insurance programs for the protection of Marquette's international students, faculty and researchers.

Another branch of OCIP is the Marquette program in English as a Second Language (ESLP). Students of other language backgrounds may be required to take ESLP English proficiency examinations when they arrive at Marquette and may be assigned to special ESLP courses.

OCIP staff members serve frequently as international education resources for other Marquette personnel, and OCIP administrators offer information sessions upon request for other campus departments. These administrators represent the university in appropriate forums from the local to national levels and also represent Marquette overseas through international recruitment trips, professional relationships and speaking engagements in many areas of the world.

The Office of Campus International Programs is located in the Alumni Memorial Union, 425, telephone (414) 288-7289.

CAMPUS 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 Parking Structure I, 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. In cases of emergency, students and employees should contact Public Safety's emergency line by dialing 8-1911 from any campus extension or (414) 288-1911 from any off-campus phone.

Public Safety officers monitor on- and off-campus areas utilizing squad, foot and bicycle patrols. Public Safety officers are trained to respond to all calls for assistance, including crimes in progress and medical emergencies. Communications officers operate the department's 24-hour Communications Center and university service officers patrol and service the university's parking lots, buildings and malls to ensure that security and safety are maintained. Security within the university's residence facilities is ensured by Public Safety's Safety Services officers, who are on duty from 11:30 p.m. to 7:30 a.m., daily.

The department maintains an outdoor telephone system, including more than 80 Blue Light Phones. Blue Light Phones are located on campus pedestrian walkways, mall areas and within or near all of the university's parking lots. Six Blue Light Phones are located at Valley Fields and over a dozen are located in the near off-campus residential area. Blue Light Phones provide a direct link to Public Safety's Communication Center. Upon activation of a Blue Light Phone, the caller's location is immediately known to the communications officer, who will provide the appropriate assistance.

A wide variety of crime prevention and safety awareness programs are made available to groups that are interested in promoting safety. Popular topics include self defense, personal safety, sexual assault prevention and alcohol awareness. Numerous brochures, the *Awareness* newsletter and crime statistics are readily available to provide information.

Any member of the Marquette community who becomes involved in a crisis situation can receive the benefits of the Victim/Witness Services program. The program provides resources for those in need of counseling or support services in addition to providing escorts to and from all necessary court-related appearances.

Public Safety complies with the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act through the publication of the *Safety Resource Guide*, a booklet which includes campus crime statistics and crime prevention strategies. Copies are available from Public Safety or by calling (414) 288-7320.

CAREER SERVICES CENTER

The Career Services Center (CSC), located in Marquette Hall, offers a wide variety of services for students in all majors. The office and its staff assists students seeking internships, graduating seniors looking for entry-level positions, and alumni looking for new career positions. Resources in the career services center are available for students applying to graduate or professional schools or for prestigious scholarships and fellowships.

Services include career counseling/job search assistance, on-campus interviewing, career fairs, internship listings and assistance, on-line links to job listings and resources, resumes for referral to employers, career resources/employer information, career-related workshops and seminars.

- Career counseling/job search assistance: Student having selected a major can often use assistance researching and clarifying career possibilities based on that major. Career counselors can assist in this process. Students needing assistance getting started on their job search can seek help from a career counselor. These professionals can provide help with resumes, cover letters, developing a job search plan, preparing for interviews, and clarifying career goals.
- Seminars for small groups are conducted regularly throughout the year on topics such as job search, resume and cover letter writing, interviewing, dress for success, and networking. Individual counseling is available by appointment. Every afternoon, a trained career intern is available to critique resumes and conduct orientations to MU CareerTRAK and services offered in the CSC.
- Career Fairs: Marquette students and business, communication, government, nonprofit, and technical employers (September); Wisconsin Private College Fair (February)
- On-campus interviewing: The CSC hosts hundreds of employer visits during fall and spring terms, which include internships and full-time campus interviewing opportunities.
- MU CareerTRAK: This interactive online system links students with employers by providing full-time and internships positions, maintaining a database of student resumes for employer access, and managing the on-campus recruiting program.
- The Career Resources Center houses computers for students use, a career library with resources such as subscriptions to career-specific job announcements, employer directories, books on various careers and majors, job search books, current articles, and graduate/professional school materials. Topical handouts are also available in the resource center and online.
- A Marquette University alumni career networking database is available for students seeking career information and students and alumni seeking career networking relationships.
- Most of our career resources are available online. Current data and web links are accessible online through the office's website at www.marquette.edu/csc. Questions and resumes may be sent to career.services@marquette.edu.

Main Office and Recruiting: Marquette Hall, 05; 8:00 a.m.-5:00 p.m. Monday through Friday, (414) 288-7423.

Career Resource Center and Counseling: Marquette Hall, 01; 8:30 a.m.-5:00 p.m. Monday through Friday. Open until 7:00 p.m. on Wednesdays while classes are in session, (414) 288-3577.

CHANGE OF NAME OR ADDRESS

Whenever a student changes his or her name or address, the change must be reported to the university registrar, who will notify all other appropriate offices.

In the case of a name change, the *Request for Change of Name* form must be requested from the Office of the Registrar, completed, notarized, and returned to that office. The basis for the change of name must also be attached to the form. In most cases (e.g., marriage), a letter of explanation will suffice; but in the case of legal change of name, a certified copy of the court

order authorizing the change is required. Free notary service is available for those who appear in person at the Office of the Registrar.

Address changes may be made in person at the Office of the Registrar, on the return card included with the Registrar's confirmation of class schedule, or, perhaps most conveniently, through Marquette's CheckMarq Information System. See the CheckMarq section of this bulletin.

CHECK CASHING SERVICES

A student may cash checks at the Office of the Bursar in Carpenter Tower and at U.S. Bank on the first floor in the Alumni Memorial Union. To cash a check, students must present a validated student ID card and pay a nominal fee. Check cashing is limited to \$50 on a personal check, \$150 on outside payroll checks, and any amount on Marquette University student payroll checks, per week. This service is available at the bursar's office between 8 a.m. and 4:30 p.m., Monday through Friday. Check cashing service also is available through the bank, between 8:30 a.m. and 5:30 p.m., Monday through Friday, and between noon and 3 p.m. on Saturday. Check cashing privileges are subject to suspension or revocation at the discretion of the bursar. Two ATM machines are available on the first floor of the AMU.

CHILD CARE CENTER

Marquette University Child Care Center is located on campus in the William and Evelyn Krueger Parent and Child Care Center at 749 N. 17th St. The center serves the children of students, staff, faculty and alumni of the university. Based in developmentally appropriate practice, the curriculum focuses on creative, child-centered play and hands-on discovery learning. The center is committed toward educating the whole child — socially, emotionally, physically and intellectually — to set the state for lifelong learning.

Licensed through the Division of Children and Family Services for 122 children and accredited by NAEYC, the center enrolls children from six weeks of age through age five. A special Summer Adventure program is also open to children age five to 11. Special arrangements can be made for days off school for school-aged children.

The center is open year round from 7 a.m. to 6 p.m. Monday through Friday, and is closed on all university holidays. For information on fees, waiting lists and enrollment, call (414) 288-5655.

CLUB SPORTS

The Club Sports program at Marquette is designed to provide competitive, recreational and instructional sports activities for students. Many clubs compete against other clubs, schools, colleges, or universities while others offer instruction and intraclub competition.

A club sport is a registered student organization conducted by elected student officers that coordinate club activities. The basic structure of the clubs allows members numerous opportunities for involvement with fund-raising, public relations, budgeting, administration and scheduling. The key to success of the club sport program is dependent upon the student leadership, interest and involvement.

The following clubs are currently active for the 2004–2005 school year: men's baseball, men's and women's curling, men's lacrosse, men's and women's rowing, men's and women's rugby, men's football, men's and women's sailing, men's and women's ski racing/snowboarding, women's softball, men's and women's swimming and diving, men's and women's volleyball, men's and women's fencing, men's and women's taekwondo, men's and women's kabudo, and, men's and women's cycling.

COMMUTER STUDENT PROGRAMS

Programs designed specifically for commuter students are provided through the Office of Student Development. Among the programs provided are Tips for Commuter Success, First-year Commuter Student Brunch, and an e-mail distribution list designed to provide an additional method of communication between Student Development and commuter students. The Alumni Memorial Union also provides services specifically for commuter students, including lockers available for a nominal rental fee and a lounge on the first level of the union.

For further information, contact the coordinator for Campus Programs in the Office of Student Development, Alumni Memorial Union, 121, (414) 288-7205.

COMPUTER SALES

See www.cdwg.com/mustudent or www.applestore.com (follow education link for educational discount).

COMPUTER SUPPORT — See Information Technology Services

COUNSELING CENTER

The Counseling Center provides individual and group therapy for students with vocational and/or personal concerns. Services are provided by psychologists, social workers, masters level counselors and a consulting psychiatrist. Located in Holthusen Hall, 204, the Counseling Center also has a Career Information Library in Room 202, which can be used without an appointment. The Center is open Monday through Friday, 8 a.m. to 4:30 p.m.

To make an appointment, contact the receptionist by phone at (414) 288-7172 or in person at Holthusen Hall, 204 1324 W. Wisconsin Ave. No fees are charged to University students enrolled full time. Students who are enrolled part time will be offered one session for consultation and referral. For additional resource information on personal and career exploration services, please visit the Counseling Center at www.marquette.edu/counseling/.

Information and/or application blanks for the national testing programs including the Graduate Record Exam (GRE), Medical College Admission Test (MCAT), Law School Admission Test (LSAT), Graduate Management Admission Test (GMAT) and the Miller Analogies Test (MAT) may be obtained in Holthusen Hall, 204.

DENTAL CLINIC

The clinic services of the School of Dentistry are available to all Marquette students. The Dental Clinic, which is not a part of the Student Health Service, is located in the School of Dentistry. Dental services are provided at a nominal fee; all Marquette students enrolled in credit courses receive an additional 10 percent discount. Further information can be obtained from the recorded message at (414) 288-1510, or directly from the dental school switchboard, (414) 288-6500.

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 taping of textbooks, locating interpreters and notetakers, orientation to campus, informal counseling, arranging for alternative tests, and advocacy.

A policies and procedures document containing more detailed information about accessibility for all students with disabilities at Marquette is available from the coordinator of disability services, Alumni Memorial Union, 317, P.O. Box 1881, Milwaukee, WI, 53201-1881; (414) 288-1645 (Voice/TDD). The Web site for the Office of Disability Services is www.marquette.edu/oses.

INFORMATION TECHNOLOGY SERVICES

Information Technology Services (IT Services) is a support organization responsible for providing quality technology services including voice and data communications, computer-based services and training to the Marquette community. IT Services manages MarquetteNet, the University's campus-wide fiber optic network built to handle the voice, video and data needs of the Marquette community. MarquetteNet allows students to access the computing resources distributed throughout campus. Students also have high-speed access to the Internet (Emarq) from their residence hall rooms. IT Services provides an enterprise wide e-mail system for faculty, staff, and students. IT Services maintains voice communication systems throughout the University, including Voicemail, Cellular phone service, local and long-distance service. Discounted long-distance services and free voicemail and local calls are available to students in the residence halls. IT Services also provides support for the MarquetteCard. Additional information regarding the card can be found at www.MarquetteCard.com. IT Services provides support for Blackboard — a web-based tool that facilitates and supports online education at

Marquette University. IT Services also supports UNIX and MS Windows servers for academic and administrative use. IT Services provides technical support for the PCs, Macintoshes, laser printers, scanners, and other peripherals in the Campus Computer Labs. Members of the Marquette community can receive computing information and assistance from the IT Services Help Desk by calling (414) 288-7799 or e-mailing helpdesk@marquette.edu. IT Services supports business and information processing for University administrators as well as instructional and research needs of academic areas. IT Services staff aid in designing, developing and implementing both third-party software and locally created systems. For more information, including Help Desk hours, visit the IT Services Web site at www.marquette.edu/its/.

INTERNATIONAL CENTER

The International Center, located in the Alumni Memorial Union, 407, promotes interaction among students from around the world, including the United States. Students from all countries are invited to share in the international activities of the center, to participate in its operation and to plan international events. The center offers discussions and speakers, social and educational activities, films and exhibits on various cultures. Facilities include two computers for word processing and Internet access, an international music collection, worldwide television, international board games and a fully equipped kitchen. The center may be reserved by Marquette groups for their functions. The center is administered by the Office of Campus International Programs.

MAIL SERVICES

U.S. mail is delivered to students in on-campus housing by the U.S. Postal Service. Within the Alumni Memorial Union is Union Station, a U.S. Postal Contract station. Students and the public can bring letters and packages for processing by either U.S. Postal Service or United Parcel Service. Packaging, as well as shipping services, are available at Union Station.

MARQUETTE UNIVERSITY ALUMNI ASSOCIATION

The Marquette University Alumni Association (MUAA), founded in 1893, has long been in existence to serve Marquette and its current and future alumni. The mission of the Alumni Association is to help Marquette University as an urban, Catholic, Jesuit institution become one of the nation's most distinguished universities and, to this end, strive to bring all alumni closer to the University and one another in the Ignatian tradition of care for each person.

The MUAA is an umbrella organization composed of over 50 alumni chapters: national, geographic clubs for alumni, parents and friends of the University; and Milwaukee college and interest-based alumni associations. These various groups plan spiritual and networking events, fund student scholarships and financial awards, recognize outstanding alumni, and support the needs of the University's college deans as well as its enrollment, retention, fund raising, marketing, and diversity efforts.

MULTICULTURAL CENTER

The Multicultural Center is a part of the Office of Student Development. Established in 1972 as a focal point for ethnic minority student interaction and activities, the MCC promotes a philosophy of cultural inclusiveness in its services and programs. The purpose of the MCC is twofold. First, through programs and consultation, the campus community learns about ethnic minority cultures, celebrates each group's cultural contributions, and models how to live in a multicultural world. Second, the MCC assists students from different ethnic backgrounds to create a campus environment that supports their educational goals.

In conjunction with other departments and student organizations, the MCC offers programs and activities promoting ethnic awareness throughout the academic year. To learn more about these activities, contact the assistant dean for intercultural programs in the Office of Student Development, Alumni Memorial Union, 121, (414) 288-6769. The Multicultural Center lounge is located in the Alumni Memorial Union, 111.

PARKING SERVICES

In order to park in a University owned lot or structure at any time throughout the calendar year, a parking permit must first be purchased from the Parking Services Office. This will require registering your vehicle information, paying the appropriate fees, and displaying a valid permit on your vehicle.

While parking permits have traditionally been sold at the Alumni Memorial Union on the first two days of the fall semester and on the first day of the spring term, parking permits are now available for sale on-line from the Marquette University website at www.marquette.edu/parking.html. If available space allows, short-term, temporary parking permits may also be purchased from the Parking Office, located in the new Structure 2 at 1240 W. Wells Street.

Students who commute to campus may purchase a permit and gate card for entry into Lot T at 609 N. 19th Street or to Structure 2. The number of commuter students assigned to the new structure will be limited.

Student overnight or 24 hour parking permits are available in all three of the university's structure facilities; Structure 1 at 749 N. 16th Street, Structure 2 at 1240 W. Wells Street or Structure 3 at 718 N. 18th Street behind Humphrey Hall. Twenty-four hour/overnight parking in surface lots will be limited to Lot B at Mashuda Hall, Lot R at Straz Tower and Campus Town 3, north of Open Pantry.

Both evening and part-time commuter student permits are also available for sale. Again specific lot assignments and entry gate cards are issued along with your vehicle permit. Please contact the Parking Office at (414) 288-6911 for more specific parking inquiries. Also please note that Parking Services will be moving to their new offices in Structure 2 in August 2003.

RECREATIONAL SPORTS

Indoor recreation activity at Marquette University revolves around the Helfaer Tennis Stadium and Recreation Center and the Rec Plex. Both facilities are free to all students, while their families are eligible to join for a nominal fee.

Facilities at the Recreation Center include six indoor tennis courts, two handball/racquetball/wallyball courts, a squash court, swimming pool, multipurpose room (containing space for five basketball courts, four volleyball courts, three badminton courts and a jogging lane), fully equipped fitness/weight room, aerobics room, pro shop, four locker rooms, two saunas and a fitness assessment center.

The Rec Plex, located in Straz Tower, includes four handball/racquetball/wallyball courts, a squash court, two gyms, swimming pool, suspended jogging track, two weight rooms, yoga studio, four locker rooms, saunas, whirlpools, steam rooms, massage therapy and a fitness assessment center.

The Valley Fields Complex is a 13-acre facility located a short distance south of central campus. This outdoor complex includes an 8-lane 400 meter track; a synthetic turf regulation football/soccer/lacrosse field; two synthetic turf recreational fields; a natural turf soccer field; and a gatehouse service building for equipment issue, rest rooms and vending. It will serve as a venue for individual fitness activities, intramural sport contests, club and varsity sport practices and games/meets, and university and community group use.

The Instructional Program is geared toward providing avenues for one to get in shape, feel good, and have fun throughout his or her lifetime. Activities in this program include tennis, yoga, spinning, taekwondo, kick boxing, stability ball, aerobics, water exercise, swimming, SCUBA and more. Instruction is geared to meet individual needs. Instructional programs are offered during the regular academic year and during summer sessions. There is a nominal fee and enrollment is limited.

REGISTRATION

Marquette University utilizes a Web-based online registration process using Marquette's CheckMarq Student Information System. In addition to offering the convenience of computer registration, CheckMarq also offers early registration by permitting continuing and readmitted students to begin registering for the next term during the previous term. New students begin registration at a somewhat later date, but still several weeks before the first day of class.

A student must have both an MU Identification number (MUID) and a CheckMarq password to register using the CheckMarq system.

Students complete their registrations using the CheckMarq system according to the procedure described in the university's registration *Schedule of Classes*. No class may be attended for which the student is not properly registered. Proper registration includes the payment of all tuition and fees. Advising is required for all students prior to registration each term. Accordingly, students who register for course work without adviser approval assume full responsibility for their registrations. Courses that do not satisfy the requirements of their programs of study will not be applied toward the degree.

All courses for which the student is officially registered as of the close of Late Registration are subject to fee assessment and payment, and as such to appear as part of the student's permanent record. It is the student's responsibility to be certain that, before Late Registration ends, his or her official registration accurately reflects only those courses for which he or she wants to be enrolled.

SPEECH AND HEARING CLINIC

The services of the Marquette Speech and Hearing Clinic are available to Marquette students, and their dependents, at no cost. Available services include speech, language and hearing evaluations, and therapy to assist with speech or language problems. The clinic is located in Monitor Hall, 619 N. 16th St. An application can be obtained by calling (414) 288-7426.

STUDENT DEVELOPMENT

The Office of Student Development, housed within the Division of Student Affairs, promotes the education and development of each student and the campus community. The staff, programs, resources, and facilities that comprise the office contribute to the education of the whole person — the development of intellect, spirituality, integrity, identity, and professional and interpersonal competencies. Furthermore, the office serves as a catalyst in the evolution of a culture in which members of the campus community respect, appreciate, understand and learn from each other and from reflection on their experiences.

Through the design and delivery of a wide variety of programs and services, the Office of Student Development focuses on four goals: 1) encouraging active student involvement and a strong, vibrant campus community; 2) fostering a lifelong ethic of service and a commitment to working for a more just society; 3) enhancing student leadership and character development, and 4) valuing diversity and diverse perspectives.

Specific programs coordinated by the Office of Student Development include:

- Preview, Orientation, and new student programs
- Students Taking Active Roles (STAR) first-year leadership program
- recognition and advisement of 190 student organizations including Marquette University Student Government
- multicultural events and celebrations
- student activities and campus traditions
- music organizations and programs
- commuter student programs
- Community Service Programs
- Hunger Clean-up
- Burke Scholarship program
- leadership workshops, conferences, and training sessions
- leadership resources and recognition programs
- student conduct administration
- Greek life — 16 fraternities and sororities
- Senior Week

The Office of Student Development is located in the Alumni Memorial Union, 121 and 329, (414) 288-1412. Several of its programs and services are administered through the Center for Community Service (AMU 329), the Multicultural Center (AMU 121), the Center for New Student Programs (AMU 323) and the Leadership and Organizational Resource Center (AMU 140). Housed in the Office of Student Development, these centers serve as educational hubs that provide students, faculty, staff and community members with resources, expertise and support for their activities.

STUDENT EDUCATIONAL SERVICES

The Office of Student Educational Services provides a range of academic support services to students free of charge. These services include:

TUTORING SERVICES

Free tutoring services are provided for a variety of courses. Tutorial sessions are conducted by Marquette students in the Alumni Memorial Union. Students may request this service by completing a Tutor Request Form in AMU, 317. (See also Writing Center.)

STUDY SKILLS/TIME MANAGEMENT ASSISTANCE

Students may request group workshops on a variety of topics related to study skills or they may meet individually with a study skills specialist to improve their study strategies.

DISABILITY SERVICES

See section on Disability Services in this bulletin.

RETENTION SERVICES

In collaboration with the greater campus community, retention services including assessment, referral, and follow-up are provided for students with questions or concerns about any aspect of their enrollment.

Located in the Alumni Memorial Union, 317, the Office of Student Educational Services invites students to drop in or phone the office at (414) 288-3270 with their requests or questions.

STUDENT GOVERNMENT

The Marquette University Student Government is the central student governmental body for the university. As such, it has several broad responsibilities: the planning and coordination of campus-wide educational, cultural and social programs through the MUSG Program Board, the development of activities in conjunction with student organizations, and the representation of student needs and concerns to the university community.

The student body president, executive vice-president and senators are popularly elected by the total undergraduate student population. Positions in the student government and on all-university committees are open to all full-time undergraduate students. The student government offices are located in the Alumni Memorial Union, 133.

STUDENT HEALTH INSURANCE

All students enrolled and attending Marquette University and their dependents are eligible to participate in the Student Health Insurance Plan (SHIP) administered by Rust & Associates. Plan description and enrollment materials will be mailed to all enrolled students before the start of fall term each year and to all new students starting spring term. Information about the plan may also be obtained at the Student Health Service. Marquette University makes no representations about the student health plan, but considers it to be an alternative to the limitations of family plans or for students who use it as their sole source of coverage.

BRIEF SUMMARY OF PLAN BENEFITS: (Based on 2003-2004 Plan Year)*

Maximum Benefit:

\$500,000 per injury or sickness

Benefits:

A Preferred Provider Organization (PPO) provision which includes Student Health Services

\$150 annual deductible

80% of usual and customary charges in PPO network

Limited co-pays for physician visits and prescriptions

Maximum out-of-pocket expenses: \$3,150 per insured

For further information, how to file a claim and claim status:* (800) 336-0747 Rust and Associates.

For general information only, call Student Health Service: (414) 288-7184.

More complete details of the plan are available by calling Rust and Associates (800) 336-0747.

* Plan agent and/or carrier are subject to change, and benefits are subject to improvement for FY2004.

STUDENT HEALTH SERVICE

ELIGIBILITY:

All students who are enrolled in credit classes are eligible to use the Student Health Service.

Student Health Service provides quality primary care and preventive health education and wellness to the student community in the most accessible, efficient, perceptive and affordable manner possible. We are committed to helping students establish and maintain good health throughout their academic experience at Marquette. Through interactions with the Student Health Service, students learn the important role they play in managing their own health and in developing positive behaviors which will serve them well for the duration of their adult lives.

Clinical Services:

Primary/acute care clinic
 Women's care services, including annual Pap smears
 Minor surgical procedures
 Allergy injections
 Immunizations
 TB testing
 STD testing and treatment
 Confidential HIV testing
 Eating disorder evaluation
 Laboratory services
 Limited pharmacy
 Sports medicine
 Physicals

COST OF SERVICES:

Full-time undergraduates are assessed a per semester health fee as part of their tuition and fees. This entitles them to unlimited provider, nurse and health educator visits. There are no co-pays for visits. Additional fees may apply for medications, lab tests, injections, intravenous fluids, vaccines or orthopedic supplies. Questions about additional expenses related to your medical care should be discussed with a health care provider. The health fee does not cover charges incurred for referrals or care delivered elsewhere.

Part-time undergraduates, graduate and all professional students may choose to pay the health fee and access services. Voluntary prepaid health fees may be paid at the Student Health Service by cash, check, Marquette card, Visa or Master Card, or bank debit card.

Students (other than full-time undergraduates) choosing not to pay the health fee may use the Student Health Service on a fee-for-service basis.

The Student Health Service physicians are all board certified in family practice, pediatrics or internal medicine. Special areas in which these physicians are highly proficient include sports medicine, women's health, eating disorders, and adolescent medicine. Providers certified as nurse practitioners, physician assistants, registered nurses and health educators also assist students with their health care needs. Get to know Marquette's Student Health Service providers online by viewing our Web site at www.mu.edu/shs and clicking on "meet our staff."

Clinic

LOCATION:

The Student Health Service is located in the southeast wing, lower level of the Walter Schroeder Health Sciences and Education Complex.

Telephone: (414) 288-7184

Fax: (414) 288-5681

EMERGENCIES: Call 8-1911 on-campus or 911 off-campus

HOURS*

Academic year: *Subject to change — see Web site for current information.*

Monday through Thursday — 8:30 a.m. to 5 p.m.

Friday — 8:30 a.m. to 4 p.m.

Saturday Clinic — 10 a.m. to 2 p.m.

Summer

Monday - Friday 8:30 a.m. to noon; 1 p.m. to 4 p.m.

*Reduced hours when classes are not in session. The clinic is closed when university offices are closed.

Center for Health Education and Promotion

LOCATION:

707 Building, First Floor

Telephone: (414) 288-5217

Fax: (414) 288-0234

HOURS:

Monday through Friday, 8:30 a.m. to 4:30 p.m.

The Center for Health Education and Promotion offers a wide variety of prevention and wellness programs pertaining to college health issues. The programs consist of interactions, discussions and self discovery among the participants and presenters. Our programs are intended for use at meetings, dinners, study breaks and various group gatherings.

Health and Wellness Topics:

Nutrition /weight management
Hypertension screening
Men's health issues
Women's health issues
Intimate communications/relationship issues
Body image/eating disorders/self esteem
HIV/AIDS
Peer pressure
Tobacco cessation
Body art
To your health
Vegetarianism
Relaxation/stress management
Alcohol awareness
Spring break safety
Credit card debt

STUDENT IDENTIFICATION CARDS

The MarquetteCard is the official university identification card. All students are required to carry their MarquetteCard and be responsible for it at all times. The card is provided by MarquetteCard Services and is required for most activities, accesses, and services across campus. Additional information regarding the card can be found at the Web site www.marquettecard.com. Falsification, misuse, or failure to show a MarquetteCard may subject a student to disciplinary action. If a student loses his or her card, it should be reported immediately to MarquetteCard Services or Department of Public Safety or the student should suspend the card via www.marquettecard.com. There is a replacement fee for lost and damaged cards.

MarquetteCards can be obtained at MarquetteCard Services located on the first floor of the Alumni Memorial Union, 158. Current registration and photo identification are required in order to obtain a MarquetteCard.

STUDENT PUBLICATIONS

Two publications serve the general needs of Marquette students — the *Marquette Tribune*, a newspaper published Tuesdays and Thursdays, and the *Marquette Journal*, a magazine published four times each year. Although often staffed by journalism and English majors, any Marquette student who is interested in publication work can join one of the staffs and serve in some capacity. Several schools and colleges of the university also publish their own magazines, newsletters or newspapers.

STUDENT SAFETY PROGRAMS

The Department of Public Safety's Student Safety Program provides students with two programs that offer safe transportation throughout the on- and near off-campus area. Both programs provide safety escorts (mobile or foot) seven nights a week to Marquette students, faculty and staff.

LIMO PROGRAM

The LIMO (Local Intercampus Mobile Operation) Program provides a means for Marquette students and employees to travel safely between the Marquette campus and its adjoining residential areas. With a fleet of 13 vans, the LIMO program is capable of transporting all individuals, including those with physical restrictions. Posted "LIMO STOP" signs are located in every residence hall, the Alumni Memorial Union, the Raynor Memorial Libraries, the Rec Center, Humphrey Hall, Cudahy Hall and the Public Safety Office at 749 N. 16th St. These designated

stops are visited by LIMO vans approximately every 15 minutes. To request a LIMO transport from any other location, call (414) 288-6363. By showing the LIMO driver a valid Marquette University ID card, students and employees are entitled to free transportation to many locations in the on- and near off-campus areas. Generally, this includes the area bounded by Highland Avenue to the north, Clybourn Street to the south, North 7th Street to the east and North 25th Street to the west. The LIMO program operates from 5 p.m. to 3 a.m. seven nights a week, year round.

SAFETY PATROL AND ESCORT SERVICE

Outfitted in yellow windbreakers and equipped with two-way radio and flashlights, pairs of student employees help to deter crime by patrolling the campus and near off-campus areas. Safety Patrollers report suspicious activity and are available to provide escorts to and from areas within the on- and near off-campus neighborhood.

The Safety Patrol operates from 5 p.m. to midnight, seven nights a week, throughout the school year. An escort can be obtained by contacting the Communications Center at (414) 288-6363.

BICYCLE SAFETY

Public Safety maintains a secured bike corral which is located on the lower level of Parking Structure 1. The secured area can only be entered via a card system and is monitored by Public Safety. Admission into the corral is free and bicycles can be registered with the Parking Services office. All stored bicycles must be secured to the corral's racks with a high security bicycle lock. In addition to the corral, several bicycle racks are located throughout the campus area which should be used in order to prevent theft and allow for an unobstructed flow of traffic on campus. Students should utilize bike racks on campus. Locking bikes to trees, light poles and other fixtures is not permitted.

THEATRE ARTS, DRAMA

The Evan P. and Marion Helfaer Theatre provides an excellent theatre/teaching facility on campus. The structure includes a 226-seat theatre, a proscenium stage, studio room for acting, directing and dance instruction, and full production support facilities.

In addition, Straz Tower Theatre supports additional performing and class space for the Department of Performing Arts and the student-driven producing organization, Marquette University Players.

The Department of Performing Arts produces six main stage productions per year. These productions are directed by the faculty or a guest artist. Theatre majors in performance are required to audition. Other students Marquette students are welcome to audition. All undergraduate students must have a 2.000 quality point average to participate.

The Marquette University Players, under the sponsorship of the Department of Performing Arts, produces 12 to 14 projects per year. These projects are produced, directed, designed and performed by students. Auditions are open to all Marquette students.

TRANSCRIPT OF RECORDS

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 applying in writing to the Office of the Registrar at least one week in advance of the date on which the transcript is needed. Fax requests are accepted, but transcripts will NOT be forwarded by fax.

The fee for this regular service is \$3 per transcript. The fee for immediate (same day) transcript service is \$10 per transcript. All transcript fees are payable at the time of the request, preferably by check.

Every transcript that is issued directly to a student is clearly so 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 elect not to follow this recommendation are liable for any further charges for additional transcripts.

TUTORING

See Student Educational Services and Writing Center

UNIVERSITY BOOKSTORES

The Marquette University bookstores are located in two facilities: the Book Marq and The Golden Eagle. These facilities are provided by the university for the convenience of the Marquette community. Both stores accept Mastercard, VISA, Discover and American Express credit cards, FLEX and personal checks (with current identification).

BOOK MARQ

The Book Marq, located at 818 N. 16th St., provides all of the textbooks and supplies for the academic needs of the campus and general reading material. For information, call (414) 288-7317.

THE GOLDEN EAGLE SPIRIT SHOP

The Golden Eagle Spirit Shop is located in the Alumni Memorial Union and is the source for imprinted sportswear, gifts and greeting cards to the Marquette community. For information, call (414) 288-3050.

UNIVERSITY INFORMATION

Located on the second level of the Alumni Memorial Union, University Information has information about university events and organizations as well as community activities which may be of interest to the university community. Phone numbers of students and university offices also are available. Walk-up and telephone information is available during the center's regular semester hours of 7 a.m. to 11:45 p.m. Monday through Friday; 8 a.m. to 11:45 p.m. Saturday; and 9 a.m. to 11:45 p.m. Sunday. (Summer hours vary.) Call (414) 288-7250 during these hours with any questions or e-mail eagleanswers@Marquette.edu. The *Milwaukee Journal Sentinel* is sold Monday through Friday at University Information.

UNIVERSITY MINISTRY

"Into whatever city you go . . . Say to them, the kingdom of God is near to you." (Luke 10)

The proclamation of the Good News of Jesus Christ in word, sacrament, service and the living out of gospel values is the mission of University Ministry in the "city" that is Marquette University. As missioned by the Catholic Church, this work of love is directed particularly toward the education and pastoral care of students and other members of the university community. This ministry is further defined by a commitment to continuing the work and spirituality of St. Ignatius of Loyola.

University Ministry provides opportunities for faith formation, pastoral care for individuals, education for justice and service, retreat and reflection, and sacramental preparation as well as prayer and worship in several religious traditions in addition to the Catholic tradition. University Ministry is located in the Alumni Memorial Union, 236. For information, call (414) 288-6873.

THE MANRESA PROJECT

Through a generous grant from the Lilly Endowment, Inc., Marquette University is engaging in a five-year project on the "Theological Exploration of Vocation." The project's aim is to help students consider how they might best use their God-given gifts and talents to meet the growing needs of an ever-changing world. Through a freshman reading program, a speaker series, retreats, a scholarship and internship program, curriculum enhancements, Manresa offers the opportunity to ask the following questions: What are my gifts and talents? What kind of person will I become? How do I want to live my life? How can I be the difference? A specific portion of the project is devoted to nurturing young men and women considering a call to ordained or ministry, or vowed life. The Manresa Project is located in the 707 Building, 332, (414) 288-0263.

VETERANS BENEFITS

The Office of the Registrar acts as liaison between the student and the Veterans Administration or the Wisconsin Department of Veterans Affairs. Any student eligible to receive educational benefits under one of the various Veterans Administration programs must report to the Office of the Registrar 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.

V.A. regulations require schools to enforce certain standards of progress in regard to certifying veterans for educational benefits. Any veteran who fails to meet these standards cannot be certified by the school for V.A. benefits until he has satisfactorily completed counseling with the Veterans Administration.

The following norms refer only to eligibility for veterans' benefits. They do not, therefore, necessarily imply that a veteran who fails to meet them will be dismissed from Marquette. They are minimal and apply to all undergraduate divisions of Marquette University. Individual colleges may, therefore, set higher norms for continuation in that college or program; such higher norms apply to all students enrolled in that college regardless of any relationship to the Veterans Administration. The following standards are required by law and must be maintained by the school to retain approval for V.A. benefits.

Required Quality Point Average

| | | | |
|--------------------------|-------|-----------------------|-------|
| For freshmen | 1.500 | For juniors | 1.800 |
| For sophomores | 1.700 | For seniors | 1.900 |

The required quality point average for graduation in all schools and divisions is 2.000.

For the application of these norms the following definitions by semester hours are used:

| | |
|---------------------|--|
| Freshman | has earned only 23 hours or less |
| Sophomore | has earned 24 to 59 hours (incl.) |
| Junior | has earned 60 to 91 hours (incl.) |
| Senior | has earned 92 to 128 hours (and above) |

Grades of F and permanent grades of I, X and IX

In addition to the above norms no veteran will continue to be certified if the number of hours with the grades of F and permanent grades of I, X and IX exceeds the following graduated scale:

| | | | |
|--------------------------|----------|-----------------------|----------|
| For freshmen | 10 hours | For juniors | 20 hours |
| For sophomores | 15 hours | For seniors | 25 hours |

CHECKMARQ

Marquette students obtain up-to-the moment information and monitor their academic record by using the CheckMarq student information system via the Internet. The CheckMarq system is available around the clock and, among the many features, allows students to:

- view the online catalog of courses;
- browse the online schedule of classes to see all the course sections offered;
- identify their appointment time for registration and the name of their adviser(s)
- register for classes;
- check their assigned grades and grade history;
- supply and update their address and/or phone numbers;

Students can access the CheckMarq system from any computer linked to the Internet. CheckMarq can be found at <http://checkmarq.mu.edu>.

Further information and instructions regarding access to CheckMarq appear each term in the published *Schedule of Classes* and the CheckMarq Web site.

WRITING CENTER

The Ott Memorial Writing Center, located on the second floor of the John P. Raynor, S.J. Library, offers comprehensive guidance in writing for the entire Marquette community. In one-to-one sessions, tutors assist writers in identifying topics, revising, and creating final drafts. Call (414) 288-5542 to make an appointment.

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The 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 based on a distinctive set of goals and learning objectives. The learning objectives are further defined as knowledge objectives, skills objectives, and values/dispositions objectives. To learn more about the goals and learning objectives of each knowledge area, please consult the Core of Common Studies Web site at www.marquette.edu/core. Core courses in each knowledge area reflect the goals and learning objectives of that area.

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 his or her 36 credit hour Core requirement. A dual application core course satisfies core course requirements in two knowledge areas. For example, History 071, 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.

Because the knowledge, skills, and values/dispositions of some knowledge areas build upon those of others, it is recommended that students experience the core courses in a tiered fashion, if possible:

Examining the World:

| | |
|-----------------------------|------------------------------|
| Rhetoric (R) | 6 credit hours (two courses) |
| Mathematical Reasoning (MR) | 3 credit hours (one course) |

Engaging the World:

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

Evaluating the World:

| | |
|-------------------------------|----------------|
| Human Nature and Ethics (HNE) | 6 credit hours |
| Theology (T) | 6 credit hours |

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.

New courses are approved for the Core of Common Studies each semester. For a regularly updated list of approved Core courses, please consult the Core of Common Studies Web site at www.marquette.edu/core.

▲ Indicates UCCS courses throughout the bulletin.

CORE OF COMMON STUDIES COURSES:**Rhetoric (R) (6 credit hours):**

| | |
|----------|---------------------------|
| COMM 011 | Contemporary Presentation |
| ENGL 001 | Expository Writing 1 |
| ENGL 002 | Expository Writing 2 |

Mathematical Reasoning (MR) (3 credit hours):

| | |
|----------|---|
| COSC 050 | Introduction to Computer Science |
| MATH 025 | The Nature of Mathematics |
| MATH 060 | Modern Elementary Statistics |
| MATH 070 | Finite Mathematics |
| MATH 071 | Elements of Calculus 1 |
| MATH 073 | Calculus for Biological Sciences |
| MATH 080 | Calculus 1 |
| MATH 081 | Calculus 2 |
| PRST 060 | Research and Statistical Methods |
| PSYC 060 | Psychological Measurements and Statistics |
| SOCI 060 | Social Statistics |

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

| | |
|----------|---|
| AFAS 131 | Air Force Leadership Studies 1 |
| ARSC 140 | Perspectives on Women in Society |
| CRLS 051 | Introduction to Criminology |
| CRLS 167 | Women, Crime and Criminal Justice |
| ECON 020 | Introduction to Economics |
| ECON 043 | Principles of Microeconomics |
| NASC 185 | Leadership and Management |
| POSC 020 | American Politics |
| POSC 040 | Comparative Politics |
| POSC 060 | International Politics |
| PSYC 001 | General Psychology |
| PSYC 078 | Introduction to Lifespan Developmental Psychology |
| PSYC 101 | Developmental Psychology: Conception through Adolescence |
| PSYC 103 | Developmental Psychology 3: Adulthood and Aging |
| PSYC 111 | Introductory Social Psychology |
| PSYC 112 | The Psychology of Prejudice* (Dual Application course: also qualified in the Diverse Cultures knowledge area) |
| PSYC 114 | Human Factors Engineering |

| | |
|----------|--|
| PSYC 132 | Personality Theory |
| PSYC 137 | Abnormal Psychology |
| PSYC 165 | Human Sexuality |
| SOWJ 080 | Introduction to Social Welfare and Justice |
| SOCI 001 | Principles of Sociology |
| SOCI 021 | Sociology of Family |

Diverse Cultures (DC) (3 credit hours):

| | |
|--------------|--|
| ANTH 001 | Introductory Anthropology |
| ADPR 185 | Cultural Identity, Media, and World Religions |
| ARSC 005-006 | The Dynamics of Cross-Cultural Engagement (variable listing, depending on college through which course is offered) |
| EDUC 008 | Introduction to Schooling in a Diverse Society |
| EDUC 048 | Inquiry into Contemporary Educational Issues: Developing a Knowledge Base for Teaching in a Diverse Society |
| ENGL 147 | Postcolonial Literature |
| ENGL 159 | Ethnicity in Modern American Literature and Culture |
| ENGL 177 | Studies in Multicultural Literature |
| FREN 100 | French Civilization |
| FREN 101 | French Contributions to Western Civilization |
| HEAL 025 | Culture and Health |
| HIST 071 | Latin America* (Dual Application course: Also qualified in the Histories of Cultures and Societies knowledge area) |
| HIST 077 | History of Africa* (Dual Application course: Also qualified in the Histories of Cultures and Societies knowledge area) |
| HIST 120 | African American History |
| MANA 155 | Diversity in Organizations |
| ORLE 135 | The Culturally Diverse Organization |
| PHTH 112 | Culture and Disability |
| PHAS 117 | Ethics and Diversity in Health Care |
| PSYC 112 | The Psychology of Prejudice* (Dual Application course: Also qualified in the Individual and Social Behavior knowledge area) |
| SOCI 163 | Race and Ethnic Relations |
| SOCI 165 | Social Inequality |
| SOCI 166 | Race and Family |
| SPAN 103 | Contemporary Issues in the Hispanic World |

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

| | |
|----------|---|
| ARSC 100 | Arts in a Democratic Society |
| COMM 021 | Introduction to Visual Communication |
| ENGL 005 | Honors English 1 |
| ENGL 006 | Honors English 2 |
| ENGL 022 | Survey of English Literature 1 |
| ENGL 023 | Survey of English Literature 2 |
| ENGL 032 | Survey of American Literature 1 |
| ENGL 033 | Survey of American Literature 2 |
| ENGL 042 | Introduction to Literature: Fiction |
| ENGL 043 | Introduction to Literature: Drama |
| ENGL 044 | Introduction to Literature: Poetry |
| FREN 115 | The Middle Ages (1050-1450) |
| FREN 116 | 16th Century Literature |
| FREN 119 | French 19th Century and Colonial Representations |
| GERM 115 | The Modern German Short Story |
| GERM 148 | German Literature in Translation |
| GREE 175 | Mythology |
| ITAL 148 | Italian Literature in English Translation |
| JAPA 148 | Japanese Literature in English Translation: Modern Japanese Masterpieces and Films |
| LATI 055 | Latin Literature |
| LATI 175 | Mythology |
| MUSI 051 | Music Appreciation |
| MUSI 152 | History of the Musical Theatre in America |
| SPAN 090 | Introduction to Hispanic Literature |

| | |
|----------|--|
| SPAN 105 | Spanish Literature 1 |
| SPAN 106 | Spanish Literature 2 |
| SPAN 125 | Golden Age Drama and Poetry |
| SPAN 175 | Golden Age Prose |
| SPAN 192 | 18th and 19th Century Spanish Literature |
| SPAN 193 | Spanish-American Literature I |
| THAR 050 | Theatre Appreciation |

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

| | |
|----------|---|
| HIST 001 | Growth of Western Civilization 1 |
| HIST 002 | Growth of Western Civilization 2 |
| HIST 006 | Introduction to American History |
| HIST 071 | Latin America* (Dual Application course: Also qualified in the Diverse Cultures knowledge area) |
| HIST 077 | History of Africa* (Dual Application course: Also qualified in the Diverse Cultures knowledge area) |
| HIST 082 | Survey of East Asian Civilization |
| MISL 018 | American Crucible: The Military and the Development of the U.S. |
| NASC 022 | Seapower and Maritime Affairs |

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

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|----------|--|
| ARSC 010 | Major Concepts in Modern Science 1 |
| ARSC 011 | Major Concepts in Modern Science 2 |
| BIOL 001 | General Biology 001 |
| BIOL 005 | Biology for Non-Science Majors |
| BISC 010 | Contemporary Issues in Nutrition |
| BISC 015 | Principles of Human Anatomy and Physiology |
| CHEM 001 | General Chemistry 1 |
| CHEM 002 | General Chemistry 2 |
| PHYS 001 | General Physics 1 |
| PHYS 002 | General Physics 2 |
| PHYS 003 | General Physics with Introductory Calculus 1 |
| PHYS 004 | General Physics with Introductory Calculus 2 |
| PHYS 007 | Survey of Meteorology |
| PHYS 008 | Astronomy and Space Science |
| PHYS 009 | Earth and Environmental Physics |
| PHYS 013 | Classical and Modern Physics with Calculus 1 |
| PHYS 014 | Classical and Modern Physics with Calculus 2 |
| PRST 018 | Aspects of Modern Science |

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

| | |
|----------|----------------------------|
| PHIL 050 | Philosophy of Human Nature |
| PHIL 104 | Theory of Ethics |

Theology (T) (6 credit hours):

| | |
|----------|---|
| THEO 001 | Introduction to Theology |
| THEO 100 | Hebrew Scriptures/Old Testament Overview |
| THEO 101 | New Testament Overview |
| THEO 102 | Old Testament/Hebrew Bible Selected Books |
| THEO 103 | New Testament: Selected Books |
| THEO 104 | The Bible Through the Ages |
| THEO 106 | Theology through the Centuries |
| THEO 110 | Quests for God, Paths of Revelation |
| THEO 111 | Explorations in Christian Theology |
| THEO 115 | Christian Discipleship |
| THEO 116 | Christian Theology in Cultural Contexts |

Note: New courses are approved for the Core of Common Studies each semester. For a regularly updated list of approved Core courses, please consult the Core of Common Studies Web site at www.marquette.edu/core.

▲ Indicates UCCS courses throughout the bulletin.

The 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 student 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 (which students generally complete during their first two years of college) and an Honors Program Seminar Series (in which students participate in each of the four years of their enrollment in the Program). Honors Program Foundation Courses, in keeping with the University Core of Common Studies (of which the Foundation Courses are a part), develop in students the fundamental abilities to think critically, reason analytically, and express themselves coherently both orally and in writing. In addition, these courses provide familiarity with, understanding of, and 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, characterized by topic-driven inquiry conducted from a communal perspective that requires the efforts, insights,

and perspectives of all individuals participating, build progressively on one another from year to year. They are designed both to foster curricular cohesion as well as to encourage the type of developmentally-staged learning that is essential to an integrated educational experience.

The curriculum uses the combination of Foundation Courses and an integrated Seminar Series to turn a more typical disciplinary 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. 050 or 104) or are courses that have been specially created by departments for the Honors Program (e.g. English 005 and 006). Smaller than ordinary, restricted to Honors Program students, and taught by instructors aware of and committed to the educational ideals of the Honors Program, both types of Foundation Courses enrich the student’s 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, deliberately builds upon the First-Year seminar (and the Honors Foundation Courses) 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. Please refer to the descriptions below for more detailed explanations of the Seminar Series.

COURSE DESCRIPTIONS

HOPR 001. Honors Orientation 0 sem. hrs.

HOPR 010. Honors Program First Year Seminar 1 sem. 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. *Prereq: Admission to Marquette University Honors Program. Limited to first year students in the Honors Program. S/U grade assessment.*

HOPR 020. Honors Program Second Year Seminar 2 sem. 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. *Prereq: HOPR 010 and Consent Required; Consent of Honors Program Director. S/U grade assessment.*

HOPR 100. Honors Colloquium 3 sem. hrs.
Prereq: Consent of Program Director; Limited to Honors Program.

HOPR 130. Honors Intellectual Traditions Seminar 1 3 sem. hrs.

This course, modeled on the Great Books/Ideas tradition that characterizes nearly all collegiate Honors Programs, offers students the opportunity to engage in interdisciplinary study of a selection of the most influential texts expressing the intellectual traditions of the East and West. Through study of selected works of literature, philosophy, religion, theology, the sciences and social sciences, these text-centered courses focus on critical analysis of seminal works and examine how these works and ideas have contributed to our contemporary intellectual tradition. In it students will study classic texts covering the period between Ancient Greece and the Renaissance. *Prereq: HOPR 010 and HOPR 020 and Consent of Program Director.*

HOPR 131. Honors Intellectual Traditions Seminar 2 3 sem. hrs.

This course is the continuation of HOPR 130. It begins with an investigation of classic works from the Renaissance and moves through the present. Like HOPR 130, this course is modeled on the Great Books/Ideas tradition that characterizes nearly all collegiate Honors Programs. It offers students the opportunity to engage in interdisciplinary study of a selection of the most influential texts expressing the intellectual traditions of the East and West. Through study of selected works of literature, philosophy, religion, theology, the sciences and social sciences, HOPR 130 and 131 focus on critical analysis of seminal works and examine how these works and ideas have contributed to our contemporary intellectual tradition. *Prereq: HOPR 010 and HOPR 020 and Consent of Program Director.*

HOPR 135. Honors Undergraduate Research Seminar 3 sem. hrs.

This course serves as an introduction to research methods and issues in preparation for participation in the Honors Undergraduate Research Opportunity Program. 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 010 and HOPR 020 and Consent of Program Director.*

HOPR 140. Senior Full Circle Seminar 3 sem. 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 010 and HOPR 020 and Consent of Program Director; Senior standing in the Honors Program.*

HOPR 196. Honors Program Seminar 3 sem. hrs.

Topic of broad cultural interest investigated through a variety of approaches drawn from several disciplines. Topics vary. Guest faculty from within the university 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: Consent of Program Director.*

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College of *Arts and Sciences*

The College of Arts and Sciences is the heart of Marquette University, embodying in its programs the university's mission of "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." The College provides the intellectual foundation for Marquette's academic enterprise through dialogue within and among the disciplines of the arts and sciences. This dialogue is the basis for the serious intellectual engagement of faith and reason, and for the education of the whole person — the rigorous, holistic exploration of the intellectual, moral and spiritual dimensions of human life.

The education of the whole person at Marquette begins with the core curriculum. The College of Arts and Sciences builds on the University Core of Common Studies through a College Curriculum for the Bachelor of Arts and a College Curriculum for the Bachelor of Science that integrate 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 three central goals for student learning: first, the development of fundamental skills of critical inquiry, analysis, and expression; second, the development of appreciation for the spiritual and creative dimensions of human life and culture; and, third, the development of a responsible commitment to the broader social and political communities in which they live. These goals envision the Curriculum as a foundation for students' intellectual growth as they pursue their majors and professional disciplines, and for developing "men and women who will dedicate their lives to the service of others."

Each College Curriculum in the College of Arts and Sciences challenges students to embrace, seek to understand, and actively engage the complexities of the world in which they live. To achieve its goals, the College Curriculum for the Bachelor of Arts integrates multi-disciplinary based inquiry and thematic seminars. The disciplines of arts and sciences share a deep commitment to advancing the theoretically informed pursuit of knowledge. Courses drawn from the different disciplines within the humanities, natural sciences, and social sciences provide a context of different perspectives and multiple methods of inquiry. Knowledge obtained through discipline-based inquiry is particularly valuable when integrated and applied. The College Curriculum for the Bachelor of Arts facilitates this process through advanced seminars offered across the College. Grounded in the tradition of Jesuit education, these seminars focus on enduring questions of faith and reason.

COLLEGE MISSION STATEMENT

The 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 theology, 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 life of those wider communities in which it lives.

DEGREES/MAJORS OFFERED

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

The degrees of master of arts, master of science, and doctor of philosophy are conferred through the Marquette University Graduate School (See the Graduate Bulletin for information concerning the following graduate programs offered wholly or partially by departments in the College of Arts and Sciences: applied economics, bioinformatics, biological sciences, chemistry, clinical psychology, computing, English, history, international affairs, mathematics, philosophy, political science, public service, religious studies, Spanish, and theology).

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.

ADMISSION REQUIREMENTS

For admission requirements for the College of Arts and Sciences, see the section on Admission Procedures of this bulletin.

GRADUATION REQUIREMENTS

AMOUNT AND QUALITY OF WORK

In addition to fulfilling the University Core of Common Studies and other requirements for graduation (see the University section of this bulletin), candidates for a degree must earn a minimum of *128 semester hours of credit* and a minimum of quality points equal to twice the number of semester hours completed (2.000 quality point average). Students may present credits but not quality points from another institution. All students must earn at least a 2.000 average in their Marquette work.

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.

Applications for graduation are to be submitted to the College 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, College of Arts and Sciences, and major department requirements.

BACHELOR OF ARTS COLLEGE CURRICULUM

The Bachelor of Arts degree is awarded in African-American studies, American Military History, Anthropology, Classical Languages, Classical Studies, Criminology and Law Studies, Economics, English, French, German, History, History of Philosophy, International Affairs, Political Science, Psychology, Social Philosophy, Social Welfare and Justice, Sociology, Spanish for the Professions, Spanish Language and Literature, Theology, Women's Studies, and Writing Intensive English. The Bachelor of Arts also is awarded for teaching majors in approved areas (see departmental listings).

A minimum of 48 semester hours of credit in upper division courses must be presented for the B.A. degree. Thirty-two upper-division credits must be completed at Marquette (lower division courses are numbered 001 to 099; upper division courses are numbered 100 to 199).

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

| | <i>Credit Hours</i> |
|--|---------------------|
| English Composition | 6 |
| Foreign Language | 0-14 |
| History | 6 |
| Social-Behavioral Science | 9 |
| Literature | 6 |
| Mathematics-Logic-Computer Science | 6 |
| Natural Science | 6-8 |
| Philosophy | 9 |
| Theology | 9 |
| Senior Experience | 3 |

BACHELOR OF SCIENCE COLLEGE CURRICULUM

The Bachelor of Science degree is awarded in the following areas: Applied Mathematical Economics, Biochemistry/Molecular Biology, Biological Sciences, Broad Field Science, Teaching Major, Chemistry, Computational Mathematics, Computer Science, Human Biology, Mathematics, Physics, and Physiological Sciences. The Bachelor of Science also is awarded for teaching majors in approved areas (See departmental listings.).

A minimum of 42 semester hours of credit in upper division courses must be presented for the B.S. degree. Thirty-two upper-division credits must be completed at Marquette (lower division courses are numbered 001 to 099; upper division courses are numbered 100 to 199).

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

| | <i>Credit Hours</i> |
|--|---------------------|
| English Composition | 6 |
| Foreign Language | 0-8 |
| History | 3 |
| Social-Behavioral Science | 3 |
| History or Social-Behavioral Science | 3 |
| Literature | 6 |
| Mathematics-Computer Science | 6 |
| Natural Science | 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 Bachelor of Arts.

COLLEGE CURRICULUM REQUIREMENTS

College curriculum requirements also may fulfill major/minor requirements and vice versa, but a course can fulfill only one College Curriculum requirement.

ENGLISH REQUIREMENT

B.A. and B.S. Degrees: All students must complete ENGL 001 and 002 for a minimum of six credit hours. Non-native speakers of English are required to take a placement test at Marquette during orientation.

FOREIGN LANGUAGE REQUIREMENT

All students must demonstrate competency in a foreign language. The number of credit hours to be completed may vary from 0-14, depending on the student's proficiency and whether they are enrolled in a B.A. or a B.S. degree program. Students coming to Marquette University directly from high school are advised to begin language study in their freshman year and are required to begin it no later than the first term of the sophomore year.

For information on placement in foreign language courses and/or special placement credit, see the corresponding sections in the University section of this bulletin.

B.A. Degree: The foreign language requirement for students in B.A. degree programs may be completed with 0-4 courses in the language. The number of credit hours to be completed may vary from 0-14, depending on the student's proficiency and level of placement.

For students who wish to study French, German, or Spanish as a new language, and have not studied, or had previous experience with or exposure to the language, the requirement may be completed in three to four terms of the same language. Students who earn an AB or better in Elementary Language 002 may elect to complete the requirement with Concentrated Intermediate Language 010 in place of Intermediate Language 003 and 004.

For students who are placed at the Intensive Elementary 009 level in French, German, or Spanish, the language requirement may be completed by taking 009, 003 and 004, or 009 and 010 (if the student has earned an AB or better in 009).

For students who wish to study Classical Greek, Italian, Japanese, or Latin as a new language, and have not studied, or had previous experience with or exposure to the language, only the four-term sequence (Language 001-004) is available.

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

For students who wish to study French, German, Classical Greek, Italian, Japanese, Latin, or Spanish as a new language, and have not studied, or had previous experience with or exposure to the language, the requirement may be completed in two terms of the same language by completing Elementary Language 001 and 002.

For students who are placed at the Intensive Elementary 009, or the Concentrated Intermediate 010 levels in French, German, or Spanish, the requirement may be completed with one course.

Students with previous study of a language, who are placed at the 003 level, may complete the requirement with Intermediate Language 003 and 004.

MATHEMATICS-LOGIC-COMPUTER SCIENCE REQUIREMENT

B.A. Degree: Students must fulfill this six-hour requirement by completing any combination of mathematics, computer science, logic or statistics courses, except for a combination of two logic courses (PHIL 001, PHIL 099, MATH 099) or two statistics courses (MATH 060, MATH 164, PSYC 060, SOCI 060). MATH 010, 020, and 021 do not fulfill this requirement.

B.S. Degree: Students must fulfill this six-hour requirement by completing any combination of mathematics, computer science or statistics courses, except for a combination of two statistics courses (MATH 060, MATH 164, PSYC 060, SOCI 060). MATH 010, 020, and 021 do not fulfill this requirement.

LITERATURE REQUIREMENT

B.A. and B.S. Degrees: All students must complete six hours in literature, either in English or Foreign Languages and Literatures (original or translation).

NATURAL SCIENCE REQUIREMENT

B.A. and B.S. Degrees: All students are required to complete two courses in natural science for a minimum of six credit hours. ARSC 010 and 011, BIOL 001, 002 and 005, CHEM 001 and 002, PHYS 001, 002, 003, 004, 007, 008 and 009, ANTH 002 or 106 can be applied to Arts and Sciences college curriculum requirements. Only one anthropology course may be used to fulfill this requirement, and it cannot also fulfill part of the Social-Behavioral Science requirement.

PHILOSOPHY REQUIREMENT

B.A. and B.S. Degrees: All students are required to complete PHIL 050, 104, and one upper division course.

HISTORY REQUIREMENT

B.A. Degree: All students are required to complete either HIST 001 or 002, and at least one additional course from among the following: HIST 001, 002, 006, 071, 077, or 082.

B.S. Degree: All students are required to complete either HIST 001 or 002.

SOCIAL-BEHAVIORAL SCIENCE REQUIREMENT

B.A. Degree: To complete the nine hours in the social-behavioral sciences, students may select any three courses from the departments of Economics, Political Science, Psychology, or Social and Cultural Sciences. Courses from at least two of these departments must be represented among the nine hours.

B.S. Degree: Students are required to complete one course in a social-behavioral science in the fields listed above. Note: B.S. students are required to complete either a second History course or a second Social-Behavioral Science course.

THEOLOGY REQUIREMENT

B.A. and B.S. Degrees: All students must complete nine hours of theology: THEO 001, one second-level course (THEO 100-119), and one third-level course (THEO 120-199), in that sequence.

SENIOR EXPERIENCE

B.A. Degree: All students must complete a three-hour course on a theme common to all Arts and Sciences students. This senior experience can be taken in either a seminar or small lecture format.

OVERLAP OF UNIVERSITY CORE OF COMMON STUDIES (UCCS) AND COLLEGE CURRICULUM REQUIREMENTS

The University allows one UCCS course to fulfill two areas of the University Core, which is termed a “dual application.” Many, but not all UCCS approved courses also fulfill Arts and Sciences College Curriculum requirements. Bachelor of Arts and Bachelor of Science degree students likely will want to select Arts and Sciences courses that fulfill UCCS requirements and that also can be applied to the Arts and Sciences College Curriculum requirements. The courses that fulfill UCCS requirements and that apply to Arts and Sciences College Curriculum requirements are listed by areas of the University Core:

RHETORIC (R): (6 CREDITS)

ENGL 001 and 002 fulfill UCCS Rhetoric requirements and Arts and Sciences College Curriculum requirements in English Composition.

MATHEMATICAL REASONING (MR): (3 CREDITS)

COSC 050, MATH 060, 070, 071, 073, 080, and 081, and SOCI 060 fulfill UCCS MR requirements and can be applied to Arts and Sciences College Curriculum requirements in Mathematics-Computer Science.

INDIVIDUAL AND SOCIAL BEHAVIOR (ISB): (3 CREDITS)

All UCCS approved courses in Anthropology, Criminology and Law Studies, Economics, Political Science, Psychology, Social Welfare and Justice, and Sociology that are offered through the College of Arts and Sciences fulfill UCCS requirements in ISB and can be applied to Arts and Sciences College Curriculum requirements in the Social-Behavioral Sciences.

DIVERSE CULTURES (DC): (3 CREDITS)

The Arts and Sciences Curricula do not have requirements in DC in addition to UCCS requirements. Arts and Sciences courses that have been approved for the UCCS DC area also may be used to satisfy College Curriculum and/or major or minor requirements where appropriate.

LITERATURE/PERFORMING ARTS (LPA): (3 CREDITS)

All UCCS approved courses in English, French, German, Greek, Italian, Japanese, Latin, and Spanish literature fulfill UCCS requirements in LPA and can be applied to Arts and Sciences College Curriculum requirements in Literature.

HISTORIES OF CULTURES AND SOCIETIES (HCS): (3 CREDITS)

HIST 001, 002, 006, 071, 077, and 082 fulfill UCCS requirements in HCS and can be applied to Arts and Sciences College Curriculum requirements in History (See the section on History Requirement that follows for further explanation of which courses are required.)

SCIENCE AND NATURE (SN): (3 CREDITS)

ARSC 010 and 011, BIOL 001 and 005, CHEM 001 and 002, PHYS 001, 002, 003, 004, 007, 008, 009 and 013, 014 fulfill UCCS requirements in SN and can be applied to Arts and Sciences College Curriculum requirements in Natural Science.

HUMAN NATURE AND ETHICS (HNE): (6 CREDITS)

PHIL 050 and 104 fulfill UCCS requirements in HNE and can be applied to Arts and Sciences College Curriculum requirements in Philosophy.

THEOLOGY (T): (6 CREDITS)

All UCCS approved courses in Theology fulfill UCCS requirements in T and can be applied to Arts and Sciences College Curriculum requirements in Theology (See the section on Theology Requirement that follows for further explanation of which courses are required.).

▲ Indicates UCCS courses throughout the bulletin.

Students should consult the Web site at www.marquette.edu/core to review an updated list of courses that will satisfy UCCS requirements. Because not all UCCS approved courses satisfy College of Arts and Sciences Curriculum requirements, the student should consult with his or her adviser to most efficiently plan a program that satisfies both UCCS and Arts and Sciences Curriculum requirements.

INTERDISCIPLINARY COURSES

Students seeking to apply an interdisciplinary course toward the fulfillment of a curriculum requirement should contact the college office and, if taken at another institution, provide a course description or syllabus.

CORE CURRICULUM REQUIREMENTS FOR EDUCATION MAJORS

Besides completing at least one academic major, students in the College of Arts and Sciences intending to complete a teacher-preparation program, elementary/middle school or middle school/secondary, through the Marquette School of Education must also meet the curriculum requirements of the College of Arts and Sciences, adjusted to meet both graduation and licensure requirements. These college curriculum requirements are very specific and require that students seeking to complete the program in four years plan their course work very carefully under the supervision of an academic adviser from the School of Education. The elementary/middle school program and some middle school/secondary programs may extend beyond a four year sequence. Students who intend to complete a teacher-preparation program through the Marquette School of Education should contact the Office of Teacher Education as early as possible, and should carefully study the School of Education section of this bulletin.

Students interested in elementary/middle school education are required to complete one of the approved, regular academic majors offered in the College of Arts and Sciences. Students interested in middle school/secondary education must complete at least one teaching major to be eligible for Wisconsin licensure. A teaching minor alone is not sufficient for license eligibility but, as a supplement to a teaching major, may lead to licensure in additional areas. Students at either the elementary/middle school or middle school/secondary level must also complete the appropriate professional education sequence to be eligible for a Wisconsin teacher's license. Further information can be found under Curricula Information in the School of Education section of this bulletin.

MAJORS AND MINORS

DEPARTMENTAL 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 bachelor of arts degree is offered in American military history, anthropology, classical languages, classical studies, criminology and law studies, economics, English, writing intensive English, French, German, international affairs, history, social philosophy, history of philosophy, political science, psychology, Spanish language and literature, Spanish for the professions, sociology, social welfare and justice, and theology.

A bachelor of science degree is offered in biological sciences, biochemistry and molecular biology, human biology, physiological sciences, chemistry, mathematics, computational mathematics, computer science, physics, or broad field science (see Education section).

Many of these departments offer a teaching major or minor for middle school/secondary education. Elementary/middle school education students are encouraged to review the list of majors in the School of Education section of this bulletin and to discuss their selection with an adviser.

A minor is not required but is offered in most disciplines and some interdisciplinary fields. The number of semester hours required for various majors and optional minors is listed in the departmental sections of the bulletin. Where applicable, students may overlap credits between majors and between majors and minors. Please consult the department(s) on the approved number of credits for overlap. *At least 15 hours in the major and nine hours in the minor must be completed at Marquette.*

INTERDISCIPLINARY MAJORS AND MINORS

Students for whom particular interests may be better served by a flexible grouping of courses from several areas can pursue an interdisciplinary major or minor. Such students should consult the college office where they will be referred to 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 or minor, a listing 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 office.

The following interdisciplinary majors and minors are formalized and may be declared with the appropriate program coordinator (special permission is not required):

INTERDISCIPLINARY MAJOR/MINOR IN AFRICAN-AMERICAN STUDIES

At Marquette, we believe the study of African-American culture is an integral part of the fabric of life in the United States and must be understood and appreciated as one of the chief elements that shapes and defines what it means *to be American*.

Through interdisciplinary study, the courses that constitute the major and minor challenge students to develop a broad range of intellectual skills: critical thinking and argumentation, analysis and interpretation, historical-critical method and aesthetic sensitivity. Students who pursue the degree in African-American Studies come from a variety of racial, ethnic and cultural backgrounds and seek to enlarge and to enrich their intellectual horizons so as to understand more fully themselves, those around them, and the world in which they live.

The major consists of at least 36 credit hours (18 of which may also fulfill college curriculum requirements). The nucleus of the major consists of at least eight courses in English, history, philosophy, and theology, along with two electives from a range of disciplines including fine arts, communication studies, and the social and cultural sciences. In addition, all majors will participate in an interdisciplinary African-American Studies colloquium and conduct a senior research project under faculty supervision.

The minor consists of at least 21 credit hours (15 of which may also fulfill college curriculum requirements): at least four courses in English, history, philosophy and theology; two electives from a range of disciplines including fine arts, communication studies, social and cultural sciences; and the colloquium.

For specific major/minor requirements, see the program coordinator.

INTERDISCIPLINARY MAJOR IN 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.

Requirements:

Eighteen hours in economics: ECON 043, 044, 110, 120, 174, 175.

Fifteen hours in math: MATH 080, 081, 082, 161, or 164.

Electives:

Three hours in economics (one upper-division course).

Six hours in math: Two of the following: MATH 121, 140, 147, 160, 162, 163, 167.

INTERDISCIPLINARY MAJOR AND MINOR IN INTERNATIONAL AFFAIRS

This major and 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.

Requirements for the Interdisciplinary Major in International Affairs:

Background requirements: HIST 001 and 002; ECON 043 and 044; POSC 040 and 060; one course in statistics such as MATH 060, MANA 028, PSYC 060, or SOCI 060; and demonstrated foreign language competency to the second intermediate (fourth term) level. Students are encouraged to take at least two language courses beyond the intermediate (004 or 010) level, and preferably to minor in a foreign language.

Program Requirements:

A. POSC 165, 167, 177, and 178.

B. An upper division course in international economics. ECON 151 is recommended for all students except those with a concentration in international economics. ECON 154, 155 or 156 are recommended for students with a concentration in international economics.

- C. ARSC 160. (Usually completed during the student's last spring semester at Marquette.)
- D. 12 hours from one of the following subfields. Please note that other courses may satisfy subfield requirements (especially for students who study abroad) but that any substitutions must be approved by an INIA advisor or the INIA coordinator.
1. Area Studies (Students in area studies must choose courses in one area.)
 - European Studies: ANTH 126; HIST 141, 142, 143, 145, 147-8, 149-50, 156, 157, 158, 160, 162, 164, 165, 166, 168; POSC 141, 142, 152, 173.
 - Asian Studies: HIST 181, 182, 183, 184; POSC 154, 155, 159, 175; PHIL 188; THEO 185, 186; JAPA 101.
 - Latin American Studies: ANTH 124, 142; HIST 171, 173, 174; POSC 156, 176; SPAN 102, 170, 193, 194.
 - Third World Studies: ANTH 116, 125, 144; HIST 171, 174, 177, 179, 181; POSC 154, 156, 158, 159; THEO 185, 186.
 2. Cross-Cultural Studies: FREN/GERM/SPAN 100 and 101; JAPA/ITAL 101; SPAN 102; ANTH 101, 112, 116, 126; PHIL 150, 188; POSC 148, 159; SOCI 165, 182; THEO 116, 137, 157, 163, 166, 168, 180, 182, 184, 185, 186.
 3. International Economic Relations: Students in this concentration are required to complete ECON 154, ECON 156, and one additional upper division course in international economics. One of these three courses will fulfill the INIA core requirement of an upper division course in international economics and the other two will count as two of their four required elective courses. ECON 150, 154, 155, 156; BULA 132; FINA 185; MANA 183; MARK 153; POSC 141, 179.
 4. International Political-Military Relations: HIST 113, 114, 118, 143, 147, 148, 158, 170; POSC 129, 148, 170, 173, 174, 175, 176.
 5. International Communication: Students in this concentration must complete at least two courses from the College of Communication. COMM 162; JOUR 196; CMST 140, 142; POSC 129, 141, 145, 148, 159, 170; ECON 156; HIST 113, 114, 170.
 6. PEACE STUDIES: Students in this concentration must complete two courses from each division. A) Preventing War – CMST 134, 140; HIST 165, 166, 170, 181; POSC 158, 174; B) Building Peace – ECON 155, 163; HIST 145; POSC 159, 173, 175; THEO 182, 185.
 7. SPECIAL TOPICS: Students may work with their advisors 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; and 3) The proposal must be signed and approved by the student, the student's advisor, and the INIA coordinator.

Other relevant courses (including courses offered at Marquette numbered 196, 197, 198, or 199 and many courses taken while studying abroad) may fulfill the subfield requirement with the prior approval of the program coordinator. Any substitutions must be approved by the program coordinator. No more than 15 hours of the credits counted to fulfill an INIA major may be counted toward any other major or minor.

Requirements for the Interdisciplinary Minor in International Affairs:

Background requirements: ECON 043 and 044; POSC 040 and 060.

Program Requirements:

A. POSC 165, 167, 177, and 178.

B. An upper division course in international economics. ECON 151 is recommended.

C. ARSC 160. This course is usually taken during the student's last spring term at Marquette. Any substitutions must be approved by the program coordinator. No more than nine hours of the credits counted to fulfill an INIA major may be counted toward any other major or minor.

INTERDISCIPLINARY MAJOR IN WOMEN'S STUDIES

Women's studies as an academic discipline examines the world and those who inhabit it in the light of women's own experiences of that world. Such an examination serves other established disciplines in both a complementary and corrective manner. Through its employment of gender, race, class and other critical categories of analysis, women's studies seeks not only to understand all women and their experience, but also to know each woman and her experience. The interdisciplinary nature of the women's studies major, the fact that critical thinking skills are

at its core, and the “revolutionary” effects it has on students’ personal lives all contribute to making women’s studies a versatile and powerful degree.

The interdisciplinary major of women’s studies would be secondary to the student’s primary major. The women’s studies major consists of 36 total credit hours (18 of which may also fulfill college curriculum requirements).

Requirements:

ARSC 140, and at least three courses from each of the following two areas:

Social-Behavioral Science

ANTH 130 (Also SOCI 198), CRLS 167, POSC 119, 196*; PSYC 157, 165, 166;
SOCI 021, 162, 166

Humanities

CMST 196*, ENGL 171*, 185, 186; FOLA 148; HIST 123, 152, 196*, 197*; PHIL 143,
190*; THEO 129

At least two courses from the following area:

Electives

COMM 167, CMST 137, HEAL 122

*These are special topics or colloquium courses that must focus on areas pertinent to women’s studies.

The women’s studies minor requires 21 credit hours: ARSC 140, and at least two courses from each of the above areas (Social-Behavioral Science, Humanities and Electives).

INTERDISCIPLINARY MINOR IN ASIAN STUDIES

The interdisciplinary minor in Asian studies introduces students to the culture, history, politics, economics, geography, anthropology, sociology, philosophies, and religions of Asia. The minor consists of 18 hours, six from culture and six from history and society. The remaining six 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: (six hours from each of the following)

Culture: CMST 140; JAPA 101, 148; PHIL 188; THEO 185, 186

History and Society: HIST 127, 183; POSC 154, 155, 158, 175; appropriate offerings of SOCI 196

Any substitutions must be approved by the program coordinator.

INTERDISCIPLINARY MINOR IN 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.

The minor consists of 21 hours. Required courses: THEO 157 or 158; HIST 138 or 139; one course each from electives in English and philosophy; nine additional hours drawn from other approved upper-division offerings in the four areas, at least two areas of which must be represented in these nine hours. For specific requirements, consult the program coordinator.

INTERDISCIPLINARY MINOR IN ENVIRONMENTAL ETHICS (INEE)

Students who opt for this minor will acquire the intellectual resources they need to reflect on the ethical dimensions of environmental issues. Five core 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 facilitates 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. On completion of the minor, each student is presented with a certificate listing the required and complementary courses taken and service learning completed. Every two years, the departments of Theology and Philosophy alternate directing the minor and leading the capstone seminar.

Required Courses (18 credit hours):

BIOL 040 or 140, ECON 163, PHIL 132, PHYS 009 (or CEEN 150, only for CEEN majors), THEO 171, ARSC 110.

Recommended Complementary Courses:

JOUR 173, ANTH 110, ARSC 120, CHEM 008, ENGL 198 (Literature and the Environment), THEO 170.

INTERDISCIPLINARY MINOR IN 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.

The Ethics minor comprises seven courses (21 credits) chosen from the following areas:

- I. *Ethical theory (two courses required)*: PHIL 104, and either THEO 115 or 165.
- II. *Applied ethics (two courses required, at least one from philosophy)*: PHIL 105, 108, 191, 192; THEO 171, 175, 179; COMM 161.
- III. *Contemporary Interfaces with Ethics (two courses required)*: PHIL 107, 106, 110, 131, 151, 132, 143, 189; POSC 080; SOCI 121, 128; THEO 168; MARK 157; MANA 181; COMM 166; HEAL 131, 140; and additional courses subject to special approval by the director of the Center for Ethics Study.
- IV. *Capstone experience (required)*.

INTERDISCIPLINARY MINOR IN 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. The minor requires 18 credit hours (17 credits for nursing students taking the NURS 138-139 sequence). To enroll, see the Family Studies Web page, Declaration Worksheet, or call the Family Studies Program coordinator. Any substitutions must be approved by the program coordinator. For course updates, see the Family Studies Web page.

Required courses:

SOCI 021—Should be taken before other courses in the minor, or at least as soon as the student has selected the minor.

ARSC 150—Should be taken last after the other five courses have been completed or during the student's last year of study.

Electives:

Twelve hours to include at least one course from each of the following three categories:

Category I Family as Experience

ANTH 130; HIST 123, 152; THEO 167; PHIL 110, 192; HEAL 025; SOCI 166; ENGL 173.

Category II Family as System within Society

COMM 160, EDUC 078 (only for education majors), PSYC 078, 157, 166 (for PSYC majors); SOCI 125, 129, 162, 198; CMST 170; PSYC 101, 103 (for non-PSYC majors).

Category III Family as Resource for Human Needs

CMST 145; CRLS 152, 168; EDUC 088, 104; PSYC 107, 138; SOWJ 168, 170, 182, 190.

NURS 138, 139, (only for nursing students).

PHTH 415 (only for physical therapy students).

Some additional courses may be acceptable toward the requirements (especially relevant courses numbered 196, 197, 198, or 199). See the program coordinator to receive **prior** approval for any courses not listed above or for any substitutions.

INTERDISCIPLINARY MINOR IN 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 towards realizing justice and peace in the world in which they live. The minor consists of 21 credits in the

following five tiers of courses. To enhance the interdisciplinary experience, no more than two of the six courses required by tiers B-D can be taken in any single discipline.

Requirements:

Conceptualizing Justice and Peace: ARSC 170 (1 credit hour).

Bridging Social Communities (two courses selected from the following): ADPR 196; ANTH 101, 125, 130; CMST 134, 140, 141; ENGL 159, 177; HIST 120, 152; PHIL 110, 132, 143, 189; PSYC 111, 112; SOWJ 185; THEO 165, 180, 182, 184, 185, 186.

Promoting Social and Economic Justice (two courses selected from the following): ANTH 110, 116; ARSC 120; ECON 155, 163; HIST 158, 171, 173, 177, 182; PHIL 150; POSC 105, 119, 135, 141, 142, 148, 154, 155, 156, 159, 177; SOCI 163, 165; SOWJ 080, 182; THEO 166.

Resolving Violent Conflict (two courses selected from the following): CRLS 163, 168; HIST 145, 165, 166, 170, 181; POSC 158, 165, 167, 173, 174, 175, 176, 178; THEO 168.

Capstone Seminar in Justice and Peace: ARSC 171 (2 credit hours).

Note: Relevant upper-division independent study, special topics, and internship courses can count towards the course requirements in B-D with the prior approval of the program coordinator. Any substitutions must be approved by the program coordinator.

INTERDISCIPLINARY MINOR IN 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. The minor requires 21 credit hours.

Requirements:

ARSC 130

Three hours from HIST 134, 135, 136, 138

Three hours from ENGL 114, 115; Medieval offerings of ENGL 198; FREN 115, FOLA 098, 148, GERM 190, SPAN 190

PHIL 113

THEO 140

Electives:

Six hours from the following:

Appropriate offerings of HIST 197, 198

English courses listed under required courses

Language courses listed under required courses

PHIL 119; appropriate offerings of PHIL 190

THEO 138, 141, appropriate offerings of THEO 149

Any substitutions must be approved by the program coordinator.

INTERDISCIPLINARY MINOR IN URBAN AFFAIRS

The interdisciplinary minor in urban affairs introduces students to urban issues from multiple viewpoints. The minor requires 21 credit hours:

Students must take ARSC 120 and at least one course from each of the following four areas:

ECON 145, 146

POSC 117, 118

SOCI 131, SOWJ 182, ANTH 129

HIST 121 and appropriate offerings from 196, 197, 198

In addition, students may elect other courses from an approved list from the program coordinator. An interdisciplinary urban affairs major can be created for individual students in consultation with the program coordinator.

INTERDISCIPLINARY MINOR IN URBAN AND ENVIRONMENTAL AFFAIRS

The interdisciplinary minor in urban and environmental affairs introduces students to urban issues and environmental issues that affect urban areas. The minor requires 21 credit hours.

Students must take ARSC 120, at least two courses from one of the following areas, and at least one course from each of the remaining two areas:

ECON 163, PHIL 132

ECON 146, HIST 121, POSC 117, SOCI 131, CEEN 185

PHYS 009, BIOL 040, CHEM 123, CHEM 125

In addition, students may elect other courses from an approved list from the program coordinator.

An interdisciplinary urban and environmental affairs major can be created for individual students in consultation with the program coordinator.

PROFESSIONAL MINORS

Professional minors are available in advertising (College of Communication), business administration, human resource management 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.

CRIMINOLOGY AND LAW STUDIES CURRICULA

The College of Arts and Sciences offers programs of study leading to an associate in arts degree and the bachelor of arts degree in criminology and law studies. The associate in arts degree will be awarded by the college upon completion of a 65 credit hour program. All work included in the associate degree can be applied to the bachelor's degree at Marquette University.

ASSOCIATE IN ARTS*

Background requirements:

ENGL 001 and 002, HIST 001 and 002,
POSC 020, PHIL 050, PHIL 104 or THEO 001,
PSYC 001, SOWJ 080, ANTH 001 30 sem. hrs.

Criminology and Law Studies:

051, 083, 152, 156, 157 or 159,
182, 186, 187, 188, 189..... 30 sem. hrs.

Electives: 5 sem. hrs.

TOTAL..... 65 sem. hrs.

*This is a two-year program. For the regular four-year program see the Department of Social and Cultural Sciences.

ELECTIVE COURSES

Of the 128 credit hours required for a degree, those not fulfilling core and major requirements are deemed electives. Courses in other divisions of the university may also be taken for elective credit.

PRE-PROFESSIONAL STUDIES

The Office of Pre-Professional Studies, sponsored by the 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, 208.

PRE-DENTISTRY

COURSE REQUIREMENTS

The requirements for dental schools typically include:

| | | | |
|-------------------|--------------------|-------------------|------------------|
| Biology | 8-9 semester hours | Organic Chemistry | 8 semester hours |
| English | 6 semester hours | Physics | 8 semester hours |
| General Chemistry | 8 semester hours | | |

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* which is available in the Office of Pre-Professional Studies.

DENTAL ADMISSION TEST

All candidates for dental school must take the Dental Admission Test (DAT). This test is only offered in computerized form and is usually taken 16 to 17 months before entering dental school. Registration packets are available in the Office of Pre-Professional Studies.

APPLICATION

Application is made through the American Association of Dental Schools Application Service (AADSAS), a central application service. Application packets are available in the Office of Pre-Professional Studies or the main office of Marquette's School of Dentistry. The application may also be obtained by downloading from the following Web site: www.adea.org.

PRE-MEDICINE**COURSE REQUIREMENTS**

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

| | | | |
|-------------------|--------------------|-------------------|------------------|
| Biology | 8-9 semester hours | Organic Chemistry | 8 semester hours |
| English | 6 semester hours | Physics | 8 semester hours |
| General Chemistry | 8 semester hours | | |

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

Most U.S. medical schools require the Medical College Admission Test (MCAT), which must be taken a full year before entering medical school. This test is given twice each year in April and August. Registration is online only at the Association of American Medical Colleges' Web site at www.aamc.org/mcat.

APPLICATION

Normally, application is made through the American Medical College Application Service (AMCAS). A few medical schools do not use AMCAS and require application directly to the schools. The application must be completed online at the following Web site: www.aamc.org/students/amcas/2004.htm.

PRE-LAW**COURSE REQUIREMENTS**

Law schools do not require specific college courses or majors. The Association of American Law Schools 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). Students will also need to call or write law schools in which they are interested, to request application forms and instructions. 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.

ACADEMIC REGULATIONS

Students in the 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 not enrolled for one or more years must normally follow the requirements in effect at the time 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, 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 DISHONESTY

All students enrolled in Arts and Sciences classes are subject to the college's policy and procedure on academic dishonesty.

POLICY

The College of Arts and Sciences 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 academic dishonesty as a serious violation of academic trust. It penalizes all students found to have engaged in such behavior.

The ensurance of academic honesty within the College of Arts and Sciences must be a cooperative enterprise of faculty, students and administrators. Acts of academic dishonesty include but are not limited to the following:

1. The illegitimate use of materials in any form during a quiz or examination.
2. Copying answers from the quiz or examination paper of another student.
3. Plagiarizing or falsifying materials or information used in the completion of any assignment which is graded or evaluated as the student's individual effort. Plagiarism includes submitting as one's own the ideas or work of another, including the computer programs or material from the computer files of another, regardless of whether that information is used verbatim or in paraphrased form, and regardless of whether those ideas or that work is derived from published materials or from private materials of another person who either intentionally or unintentionally contributes to the act of plagiarism. The same applies to anything derived from the Internet.
4. 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. Also, use of an examination paper previously administered (e.g., during an earlier term) without the consent of the instructor who authored the examination.
5. 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.
6. Impersonating a candidate at an examination or availing oneself of such an impersonation.
7. Intentionally interfering with any person's scholastic work, for example, by damaging or stealing laboratory experiments, computer files or library materials.
8. It is presumed that material submitted by a student for an assignment is original to that assignment and, therefore, submitting the same work for more than one course without the consent of the instructors of each course in which the work is submitted is considered dishonest.
9. Aiding or abetting any such offenses. A complete statement of the procedures followed in cases of academic dishonesty can be obtained from the college office, Marquette Hall, 208.

ADVISERS

Upon entering the College of Arts and Sciences, students are assigned a pre-major adviser. They must consult with this adviser (or the Arts and Sciences Advising Center) 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. Advisers are available during each registration period as well as by appointment throughout the academic year.

CLASS ATTENDANCE POLICY

A. Attendance is mandatory for every exercise of a course in which a student is enrolled. Absence from class prevents a student from getting the full benefit of a course. In many courses, absence also detracts from the learning process for all other students in the class. Accordingly, absences can result in lower grades due to missed examinations, assignments and exercises, and due to the failure to enter into the classroom learning process.

B. Students registered in any course offered by the College of Arts and Sciences are bound by the college's attendance policy even when they are enrolled in another college, program, or

division of the university. It is the responsibility of each student to know and follow this attendance policy and any specific attendance regulations of their instructors specified in the course syllabus.

C. The student is responsible for all material missed as a result of an absence.

D. Enforcement of the class attendance policy lies with the faculty. When their class attendance policies are clearly specified on the course syllabus, instructors may take attendance into account in evaluating student performance and assigning final grades, provided the instructor documents absences.

E. Grade Penalties for Absence

In the case of unavoidable absence (defined below), a student may make up missed examinations, assignments and exercises within reason and at the discretion of the instructor according to conditions set forth in the course syllabus. It is the student's responsibility to make arrangements with the instructor to complete missed work in a timely fashion. In all other cases of absence, instructors are not required to allow students to make up missed work. The final course grade may be reduced to a degree commensurate with any incomplete material.

In the case of absences (regardless of cause) greater than the equivalent of two weeks of class and/or lab, as defined in the syllabus, final grades can be lowered up to a maximum of a half letter grade per additional absence.

In the case of absences (regardless of cause) greater than the equivalent of three weeks of class and/or lab, as defined in the syllabus, the student may be dropped from the course, earning a grade of WA. After the WA grade has been issued, the student may not apply for a grade of W.

F. The College of Arts and Sciences defines unavoidable absences as those due to debilitating illness, personal emergency, and, with prior approval, participation in university-sanctioned athletic competitions. Students must inform their instructors and the Arts and Sciences office, in a timely fashion and with supporting evidence, of the reasons for their unavoidable absence.

ABSENCES FROM FINAL EXAMINATIONS

An Arts and Sciences student who misses a final examination in any course must file a written excuse with the college office no later than 10 days after the examination. All other students taking Arts and Sciences courses must file excuses with their college/program office. Students with validated excuses may take make-up examinations during the following term at the time designated by the university. Clearance of temporary grades (I, X, and IX) in all Arts and Sciences courses is administered by the College of Arts and Sciences.

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 hours required for graduation. Since credit is never given twice for the same course, students who receive the grade of CD or D in a course in their major or minor field need not repeat the course. They may, however, repeat the course if they wish. In such cases, the grade earned in the course repeated will be counted in the cumulative quality point average, but both will appear on the official transcript; credit will be given only once. Cognate requirements can be completed at a CD or D grade.

TRANSFER CREDIT POLICY

In accordance with the University Transfer Credit Policy, the College of Arts and Sciences will grant credit for courses taken for a grade and completed at a C or better. 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 068, 069 (lower division), 168 and 169 (upper division) indicate transferable credit for which there is no discernable Marquette equivalent. These credits will count toward the degree and may fulfill core, major or minor requirements. However, they will not fulfill any requirement where a specific course number (i.e. PHIL 050 or THEO 001) has been indicated. Contact the director of student records with any questions or concerns regarding transfer of credit.

REPEATED COURSES

See the University section of this bulletin.

REQUIREMENT TO WITHDRAW FOR ACADEMIC REASONS

Students admitted to the College of Arts and Sciences are expected to meet college academic standards. Academic performance is monitored carefully by the Committee on Scholastic Actions, and students neither maintaining steady progress nor demonstrating adequate achievement will be required to withdraw from the college.

The bases for committee review are quality 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 committee review and academic dismissal should they fail to fulfill the terms specified.

It is possible that a student could be dismissed for academic reasons even though the student's cumulative Q.P.A. 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 of the Committee's decision and of the appeal process.

SPECIAL ACADEMIC PROGRAMS

HONORS PROGRAM

The Marquette University Honors Program serves a select group of academically talented students from all divisions of the university. Participants in the program are provided with distinctively challenging learning experiences. For details, see the Honors Program section of this bulletin.

PRE-DENTAL SCHOLARS

The Pre-Dental Scholars program is an accelerated program which allows students to reduce from eight years to seven years the total time needed to complete the bachelor's and dental degrees. A typical bachelor's degree program in the College of Arts and Sciences 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. Scholars major in either 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.

Academic Standards for the Pre-Dental Scholars

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's first year class of 2007, after completion of the third year of undergraduate studies (and having earned at least 98 credits). Students will maintain a place in the Pre-Dental Scholars program by fulfilling the following requirements:

- Achieve a cumulative 3.500 Q.P.A. in the undergraduate program.

- Receive no grade less than a B in any science or mathematics course.

- Maintain a 15-18 credit hour load each term.

- Earn a score of 15 on the Dental Admission Test (DAT).

Students who fail to meet the academic requirements in any semester will be placed on probation the following semester. A second probationary semester separated from the first one by a semester of "Good Standing" will be permitted. Two consecutive semesters of failure to meet the Academic Requirements will result in withdrawal from the program.

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.

The College of Arts and Sciences will base its calculations for academic honors on all credits earned toward the bachelor's degree, including dental school credits needed to total 128 credits.

Financial Aid

The financial aid and scholarships Pre-dental Scholars receive will be applicable only to the first three years at Marquette. After completing the first three years of undergraduate course work, the student must apply for financial aid and scholarships through the dental school.

PRE-LAW SCHOLARS

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. A typical bachelor's degree program in the College of Arts and Sciences consists of four parts: University Core of Common Studies 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.

The majors students may choose to pursue are:

Anthropology, Biological Sciences, Classical Languages, Classical Studies, Computational Mathematics, Computer Science, Economics, English, French, German, History, International Affairs, Mathematics, Philosophy, Political Science, Psychology, 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.

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's first-year class of 2007, after completion of the third year of undergraduate studies (and having earned at least 99 credits) in the College of Arts and Sciences. Students will maintain a place in the Law School by fulfilling the following requirements:

- Attain a minimum cumulative 3.400 Q.P.A. in the undergraduate program, by the end of the junior year.
- Earn a score on the Law School Admissions Test that is equal to or greater than the mean score of the class admitted to the Law School in the year before the scholar's enrollment in the Law School (i.e., the first-year class of 2006). 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.
- 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. The College of Arts and Sciences will base its calculations for academic honors on all credits earned toward the bachelor's degree, including Law School credits needed to total 128 credits.

Financial Aid

The financial aid and scholarships Pre-law Scholars receive will be applicable only to the first three years at Marquette. After completing the first three years of undergraduate course work, the student must apply for financial aid and scholarships through the Law School.

FIRST-YEAR SEMINAR: INTRODUCTION TO INQUIRY (ARSC 007)

This unique first-year seminar introduces students to academic culture by demonstrating academic inquiry and practicing the skills needed for successful learning: argumentation, listening, finding evidence. Each course meeting centers on a discussion of a short text, using the rules of shared inquiry. (The rules stipulate that no one may participate who has not read the text, that discussion be restricted to the text itself, that opinions be supported by textual evidence, and that discussion leaders only ask questions, never answer them.) The group also takes up a topic relating to the students' transition to academic culture. The faculty leader is also an academic adviser for each student.

STUDY ABROAD PROGRAMS

Students wishing to enhance their academic experience and broaden their horizons are encouraged to study overseas for a summer, semester, or academic year.

Small group advising sessions are held every Friday in Marquette Hall, 208. Interested students should attend this general session to learn about the policies and procedures, and then meet with the Study Abroad Coordinator to discuss specific plans. Information on specific programs can be found in the University section of this bulletin.

All students studying abroad should submit course approval forms and register for the appropriate study abroad “holder” course to maintain continuous enrollment. Students accepted into Marquette exchange programs should register for ARSC 190. Students in “affiliated” programs register for ARSC 192. Students wishing to study with non-Marquette programs should register for ARSC 101. Students in Marquette sponsored programs (e.g. Madrid, Xalapa) should follow the instructions provided by the program. St. Clare’s students should register for INBU 191. All above courses allow students to maintain continuous enrollment at Marquette. Please note that ARSC 101 is a part-time course only.

PART-TIME STUDIES PROGRAM

Part-time Studies serves students who wish to enroll at Marquette University but are unable to attend classes on a full-time basis. Students in the division are assigned to academic advisers in the College of Professional Studies. See the section on the Part-time Studies Program in the University section of this bulletin for information.

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.

CURRICULA INFORMATION

The following outlines may be helpful in planning programs for majors. However, these are only suggested outlines. 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.**

BACCALAUREATE DEGREE PROGRAM SEQUENCE

BACHELOR OF ARTS (TYPICAL FOR MAJORS IN THE HUMANITIES AND SOCIAL-BEHAVIORAL SCIENCES)

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-------------|---|-------------|
| ENGL 001. | 3 | ENGL 002. | 3 |
| History 001 or 002. | 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 001. | 3 |
| | <hr/> 15-17 | | <hr/> 15-17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-------------|------------------------------------|-----------|
| Mathematics-Logic-Computer. | 3 | Mathematics-Logic-Computer. | 3 |
| Literature. | 3 | Literature. | 3 |
| Foreign Language or elective. | 3-4 | Foreign Language or elective. | 3 |
| PHIL 050. | 3 | Major or electives. | 6 |
| Social-Behavioral Science or THEO 001. | 3 | | |
| | <hr/> 15-16 | | <hr/> 15 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-------------|-----------------------------------|-------------|
| Diverse Cultures elective. | 3 | Philosophy (upper division). | 3 |
| Theology (second level). | 3 | Theology (third level). | 3 |
| PHIL 104. | 3 | Major and electives. | 6-9 |
| Major and electives. | 6-9 | Social-Behavioral Science. | 3 |
| | <hr/> 14-18 | | <hr/> 15-18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-------------|---------------------------|-------------|
| Major and electives. | 12-15 | Major and electives. | 15-18 |
| Senior Experience. | 3 | | |
| | <hr/> 15-18 | | <hr/> 15-18 |

BACHELOR OF SCIENCE (FOR BIOLOGICAL SCIENCES MAJORS)*Freshman*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|------------------------|-----------|
| BIOL 001 | 3 | BIOL 002 | 3 |
| CHEM 001 | 4 | CHEM 002 | 4 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| Social-Behavioral Science | 3 | MATH 073 or 080 | 3-4 |
| <hr/> | | <hr/> | |
| 16-17 | | 16-18 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|-----------------------|-----------|
| Biological Sci. elective or laboratory course .. | 3 | BIOL 100 | 3 |
| CHEM 023 or 123 | 4 | CHEM 024 or 124 | 4 |
| PHIL 050 | 3 | HIST 001 or 002 | 3 |
| Literature | 3 | Literature | 3 |
| MATH/Computer elective* | 3-4 | THEO 001 | 3 |
| <hr/> | | <hr/> | |
| 16-17 | | 16 | |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|--|-----------|
| BIOL 135 | 3 | BIOL 125 | 3 |
| Biological Sci. elective or laboratory course .. | 3 | Biological Sci. elective or laboratory course .. | 3 |
| PHYS 001 or 003 | 4 | PHYS 002 or 004 | 4 |
| PHIL 104 | 3 | History/Social-Behavioral Science | 3 |
| Elective | 3 | Elective | 3 |
| <hr/> | | <hr/> | |
| 16 | | 16 | |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|--|-----------|
| Biological Sci. elective or laboratory | 6-7 | Biological Sci. elective or laboratory | 6 |
| Philosophy (upper division) | 3 | Theology (third level) | 3 |
| Theology (second level) | 3 | Electives** | 3-5 |
| Elective | 3 | Diverse Cultures elective | 3 |
| <hr/> | | <hr/> | |
| 15-16 | | 15-17 | |

* MATH 073 or 080 and one other MATH or COSC course.

** 128 credits are required for graduation.

BACHELOR OF SCIENCE (FOR BIOCHEMISTRY/MOLECULAR BIOLOGY MAJORS)*Freshman*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|------------------------|-----------|
| BIOL 001 | 3 | BIOL 002 | 3 |
| CHEM 001 | 4 | CHEM 002 | 4 |
| MATH 080 | 4 | MATH 081 | 4 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| <hr/> | | <hr/> | |
| 17-18 | | 17-18 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|---|-----------|
| CHEM 123 or 023 | 4 | BIOL 100 | 3 |
| PHYS 001 or 003 | 4 | CHEM 124 or 024 | 4 |
| HIST 001 or 002 | 3 | PHYS 002 or 004 | 4 |
| PHIL 050 | 3 | PHIL 104 | 3 |
| THEO 001 | 3 | History/Social-Behavioral Science | 3 |
| <hr/> | | <hr/> | |
| 17 | | 17 | |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|------------------|-----------|
| BIOL 135 | 3 | BIOL 101 | 3 |
| CHEM 131 * | 3 | BIOL 125 | 3 |
| Theology (second level) | 3 | CHEM 114 | 4 |
| Literature | 3 | Literature | 3 |
| Elective | 3 | Elective | 3 |
| <hr/> | | <hr/> | |
| 15 | | 16 | |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|---|-----------|
| Biological Sci. laboratory course (upper division)** | 3 | Biochemistry/Molecular Biology electives | 6 |
| Biochemistry/Molecular Biology elective | 3-4 | Philosophy (upper division) | 3 |
| Theology (third level) | 3 | Social-Behavioral Science | 3 |
| Elective | 3 | Elective | 3 |
| Diverse Cultures elective | 3 | | |
| <hr/> | | <hr/> | |
| 15-16 | | 15 | |

*Many students, including those continuing on to graduate school, should consider the option of two terms of physical chemistry (CHEM 132 and 133) which requires an additional term of calculus (MATH 082). Students who take CHEM 132, 133, and MATH 082 are required to take only one additional elective in biological sciences, chemistry or mathematics.

**BIOL or CHEM 195 may be substituted.

BACHELOR OF SCIENCE (FOR HUMAN BIOLOGY MAJORS)

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 College of Arts and Sciences after four years of study.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|---------------------------------|-----------|
| BIOL 001 | 3 | BIOL 002 | 3 |
| CHEM 001 | 4 | CHEM 002 | 4 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| THEO 001 | 3 | Social-Behavioral Science | 3 |
| <hr/> | | <hr/> | |
| 16-17 | | 16-17 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|-------------------------------|-----------|
| HIST 001 or 002 | 3 | BIOL 100 | 3 |
| CHEM 023 (123) | 4 | CHEM 024 (124) | 4 |
| Electives | 3-4 | Elective | 3 |
| Literature | 3 | Literature | 3 |
| MATH 073 (080) | 3-4 | Theology (second level) | 3 |
| <hr/> | | <hr/> | |
| 16-18 | | 16 | |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|---|-----------|
| BIOL 135 | 3 | BIOL 125 | 3 |
| Theology (third level) | 3 | MATH 060 (164) | 3 |
| PHYS 001 (003) | 4 | PHYS 002 (004) | 4 |
| PHIL 050 | 3 | PHIL 104 | 3 |
| Diverse Cultures elective | 3 | History/Social-Behavioral Science | 3 |
| | | PHTH 001 | 1 |
| <hr/> | | <hr/> | |
| 16 | | 17 | |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------|-----------|----------------|-----------|
| BISC 013/125 | 2-4 | BISC 120 | 3 |
| BIOL 172 | 4 | PHTH 505 | 3 |
| PHIL 191 | 3 | PHTH 515 | 3 |
| PHTH 512 | 3 | PHTH 518 | 3 |
| BISC 130 | 5 | PHTH 525 | 3 |
| | | PHTH 555 | 3 |
| <hr/> | | <hr/> | |
| 17-19 | | 18 | |

For information on the physical therapy program, please see the College of Health Sciences section in this bulletin. Students admitted to the doctoral PT program who are interested in the human biological 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.

BACHELOR OF SCIENCE (FOR CHEMISTRY MAJORS)*Freshman*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|------------------------|-----------|
| CHEM 001 | 4 | CHEM 002 | 4 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| MATH 080 | 4 | MATH 081 | 4 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| | | THEO 001 | 3 |
| <hr/> | | <hr/> | |
| 14-15 | | 17-18 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------------|-----------|---|-----------|
| CHEM 123 | 4 | CHEM 124 | 4 |
| PHYS 013 (or PHYS 003) | 4 | CHEM 114 | 4 |
| MATH 082 | 4 | PHYS 014 (or PHYS 004) | 4 |
| Literature | 3 | Literature | 3 |
| HIST 001 or 002 | 3 | History/Social-Behavioral Science | 3 |
| <hr/> | | <hr/> | |
| 18 | | 18 | |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|---------------------------------|-----------|
| CHEM 115 | 4 | CHEM 133 | 3 |
| CHEM 132 | 3 | Chemistry elective* | 3 |
| PHIL 050 | 3 | Social-Behavioral Science | 3 |
| Theology (second level) | 3 | Theology (third level) | 3 |
| Elective | 3 | PHIL 104 | 3 |
| <hr/> | | <hr/> | |
| 16 | | 15 | |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-----------|---------------------------------|-----------|
| CHEM 105 | 3 | CHEM 136** | 2 |
| CHEM 106 | 2 | Chemistry elective* | 3 |
| Philosophy (upper division) | 3 | Diverse Cultures elective | 3 |
| Electives | 6 | Electives | 9 |
| <hr/> | | <hr/> | |
| 14 | | 17 | |

* CHEM 125 (offered alternate years) is required for the American Chemical Society certified degree.

** CHEM 136 may be taken the junior year, concurrently with CHEM 133.

BACHELOR OF SCIENCE (FOR MATHEMATICS MAJORS)

Students planning to complete a teaching major in mathematics should consult the outlines later in this section.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------------|-------------|---|-------------|
| ENGL 001. | 3 | ENGL 002 | 3 |
| Foreign Language | 3-4 | Foreign Language. | 3-4 |
| HIST 001 or 002. | 3 | History or Social-Behavioral Science. | 3 |
| MATH 080 | 4 | MATH 081 | 4 |
| Social-Behavioral Science | 3 | Elective | 3 |
| | <hr/> 16-17 | | <hr/> 16-17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------|-----------|---------------------------|-----------|
| MATH 082 | 4 | Literature | 3 |
| Literature | 3 | Natural Science | 4 |
| Natural Science. | 4 | MATH 090 | 3 |
| THEO 001 | 3 | PHIL 050 | 3 |
| Elective | 3 | Elective | 3 |
| | <hr/> 17 | | <hr/> 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------------|-------------|--------------------------|-------------|
| Computer Science elective | 3 | MATH electives | 6 |
| MATH 121 | 3 | PHIL 104 | 3 |
| MATH elective | 3 | Electives | 6-9 |
| Electives | 6-9 | | |
| | <hr/> 15-18 | | <hr/> 15-18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------------|-------------|------------------------------------|-------------|
| MATH electives. | 6 | MATH electives | 6 |
| Philosophy (upper division) | 3 | Theology (third level) | 3 |
| Theology (second level) | 3 | Diverse Cultures elective. | 3 |
| Electives | 3-6 | Electives | 3-6 |
| | <hr/> 15-18 | | <hr/> 15-18 |

Notes:

1. Taking the minimum number of hours each term will not accumulate sufficient hours for graduation in four years.
2. MATH 082 and 090 can be taken in either order or concurrently.
3. Potential mathematics 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 080 and/or 081 or placement in MATH 081 or 082 before registering for a calculus course.

BACHELOR OF SCIENCE (FOR COMPUTER SCIENCE MAJORS)*Freshman*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-------------|---|-------------|
| COSC 060. | 4 | COSC 061. | 4 |
| ENGL 001. | 3 | ENGL 002. | 3 |
| Foreign Language. | 3-4 | Foreign Language. | 3-4 |
| HIST 001 or 002. | 3 | History/Social-Behavioral Science. | 3 |
| MATH 090. | 3 | MATH 071 ³ | 3 |
| | <hr/> 16-17 | | <hr/> 16-17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|------------------|-----------|
| COSC 065. | 3 | COSC 125. | 3 |
| COSC 066. | 3 | COSC 126. | 3 |
| Social-Behavioral Science. | 3 | PHIL 050. | 3 |
| THEO 001. | 3 | Elective. | 3 |
| Elective. | 3 | Literature. | 3 |
| | <hr/> 15 | | <hr/> 15 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|----------------------------------|-----------|
| COSC 152. | 3 | Computer Science electives. | 6 |
| Computer Science elective. | 3 | PHIL 104. | 3 |
| Literature. | 3 | Natural Science. | 4 |
| Natural Science. | 4 | Elective. | 3 |
| Mathematics elective. | 3 | | |
| | <hr/> 16 | | <hr/> 16 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-------------|---------------------------------|-------------|
| Computer Science elective. | 3 | Computer Science elective. | 3 |
| MATH 147. | 3 | Theology (third level). | 3 |
| Philosophy (upper division). | 3 | Diverse Cultures elective. | 3 |
| Theology (second level). | 3 | Electives. | 6-9 |
| Electives. | 3-6 | | |
| | <hr/> 15-18 | | <hr/> 15-18 |

Notes:

1. Taking the minimum number of hours each term will not accumulate sufficient hours for graduation in four years.
2. 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 071.
3. MATH 080, which is a required course in the MATH major and MATH minor, fulfills the MATH 071 requirement.

BACHELOR OF SCIENCE (FOR COMPUTATIONAL MATHEMATICS MAJORS)*Freshman*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|---|-----------|
| COSC 060. | 4 | COSC 061. | 4 |
| ENGL 001. | 3 | ENGL 002. | 3 |
| Foreign Language. | 3-4 | Foreign Language. | 3-4 |
| HIST 001 or 002. | 3 | History/Social-Behavioral Science. | 3 |
| MATH 080. | 4 | MATH 081. | 4 |
| <hr/> | | <hr/> | |
| 17-18 | | 17-18 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|-----------------|-----------|
| COSC 065. | 3 | COSC 066. | 3 |
| MATH 082. | 4 | MATH 090. | 3 |
| Social-Behavioral Science. | 3 | PHIL 050. | 3 |
| THEO 001. | 3 | Electives. | 6 |
| Elective. | 3 | | |
| <hr/> | | <hr/> | |
| 16 | | 15 | |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|----------------------------|-----------|
| Literature. | 3 | Literature. | 3 |
| COSC 125 or 152. | 3 | Mathematics elective. | 3 |
| MATH 121. | 3 | Natural Science. | 4 |
| Natural Science. | 4 | PHIL 104. | 3 |
| Elective. | 3 | Elective. | 3 |
| <hr/> | | <hr/> | |
| 16 | | 16 | |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-----------|---------------------------------|-----------|
| COSC 146. | 3 | MATH 161 or 164. | 3 |
| MATH 147. | 3 | Mathematics elective. | 3 |
| Philosophy (upper division). | 3 | Theology (third level). | 3 |
| Theology (second level). | 3 | Diverse Cultures elective. | 3 |
| Electives. | 3-6 | Electives. | 3-6 |
| <hr/> | | <hr/> | |
| 15-18 | | 15-18 | |

Notes:

1. Taking the minimum number of hours each term will not accumulate sufficient hours for graduation in four years.
2. MATH 090 does not have a calculus prerequisite.
3. Potential computational mathematics 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 080 and/or 081 or placement in MATH 081 or 082 before registering for a calculus course.

BACHELOR OF SCIENCE (FOR MATHEMATICS MAJORS WITH MIDDLE SCHOOL/SECONDARY TEACHER PREPARATION CURRICULUM, GRADES 6-12)

For students who enter Marquette in EVEN-numbered years (2004, 2006 . . .). From the beginning of their work toward a degree, students should consult with the department adviser for secondary mathematics teaching majors and the Office of Teacher Education.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|---------------------------------|-----------|
| EDUC 008 | 3 | EDUC 048 | 3 |
| MATH 080 ¹ | 4 | MATH 081 | 4 |
| ENGL 001 | 3 | Computer Science elective | 3 |
| HIST 001 or 002 | 3 | ENGL 002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| <hr/> 16-17 | | <hr/> 16-17 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|---------------------|-----------|
| EDUC 078 ² | 3 | EDUC 079 | 3 |
| MATH 082 | 4 | EDUC 088 | 3 |
| MATH 090 | 3 | MATH 121 | 3 |
| ARSC 010 | 4 | MATH elective | 3 |
| PHIL 050 or THEO 001 | 3 | ARSC 011 | 4 |
| <hr/> 17 | | <hr/> 16 | |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|-------------------------------|-----------|
| EDUC 125 | 3 | EDUC 128 | 3 |
| MATH 124 | 3 | MATH elective | 3 |
| MATH 160 | 3 | MATH 161 or 164 | 3 |
| History/Social-Behavioral Science | 3 | Theology (second level) | 3 |
| Literature | 3 | Literature | 3 |
| PHIL 050 or THEO 001 | 3 | Fine arts elective | 3 |
| <hr/> 18 | | <hr/> 19 | |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------------|-----------|-----------------------------------|-----------|
| EDUC 158 ³ | 3 | EDUC 176 (student teaching) | 12 |
| MATH 137 (methods) | 3 | MATH 138 | 3 |
| MATH 135 | 3 | | |
| Theology (third level) | 3 | | |
| PHIL 104 | 3 | | |
| <hr/> 15 | | <hr/> 15 | |

Notes:

1. Potential mathematics teaching 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 080 and/or 081 or placement in MATH 081 or 082 before registering for a calculus course.
2. Fulfills 3 credits of social-behavioral science college curriculum requirements.
3. Fulfills U.D. philosophy requirements.

BACHELOR OF SCIENCE (FOR MATHEMATICS MAJORS WITH MIDDLE SCHOOL/SECONDARY TEACHER PREPARATION CURRICULUM, GRADES 6-12)

For students who enter Marquette in ODD-numbered years (2005, 2007 . . .). From the beginning of their work toward a degree, students should consult with the department adviser for secondary mathematics teaching majors and the Office of Teacher Education.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|---------------------------------|-----------|
| EDUC 008 | 3 | EDUC 048 | 3 |
| MATH 080 ¹ | 4 | MATH 081 | 4 |
| ENGL 001 | 3 | Computer Science elective | 3 |
| HIST 001 or 002 | 3 | ENGL 002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| <hr/> | | <hr/> | |
| 16-17 | | 16-17 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|----------------------------|-----------|
| EDUC 078 ² | 3 | EDUC 079 | 3 |
| MATH 082 | 4 | EDUC 088 | 3 |
| MATH 090 | 3 | MATH 121 | 3 |
| ARSC 010 | 4 | MATH elective | 3 |
| History/Social-Behavioral Science | 3 | PHIL 050 or THEO 001 | 3 |
| | | ARSC 011 | 4 |
| <hr/> | | <hr/> | |
| 13-14 | | 18-19 | |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------------|-----------|-------------------------------|-----------|
| MATH 137 (methods) | 3 | EDUC 128 | 3 |
| MATH 124 | 3 | MATH 138 | 3 |
| MATH 135 | 3 | MATH 164 | 3 |
| Literature | 3 | Theology (second level) | 3 |
| PHIL 050 or THEO 001 | 3 | Literature | 3 |
| | | Fine Arts elective | 3 |
| <hr/> | | <hr/> | |
| 15 | | 18 | |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------------|-----------|-----------------------------------|-----------|
| EDUC 158 ³ | 3 | EDUC 176 (student teaching) | 12 |
| Math elective | 3 | | |
| MATH 160 | 3 | | |
| EDUC 125 | 3 | | |
| Theology (third level) | 3 | | |
| PHIL 104 | 3 | | |
| <hr/> | | <hr/> | |
| 18 | | 12 | |

Notes:

1. Potential mathematics teaching 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 080 and/or 081 or placement in MATH 081 or 082 before registering for a calculus course.
2. Fulfills 3 credits of social-behavioral science college curriculum requirements.
3. Fulfills U.D. philosophy requirements.

BACHELOR OF SCIENCE (FOR PHYSICS MAJORS, GENERAL OUTLINE)

Students planning to major in physics should consult with the physics department major adviser as soon as possible after matriculation. To satisfy the minimum requirements for a bachelor of science in physics, the courses marked as physics electives must include eight credit hours in upper division physics excluding courses 190-199.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-------------|-----------------------|-------------|
| ENGL 001..... | 3 | ENGL 002..... | 3 |
| Foreign Language..... | 3-4 | Foreign Language..... | 3-4 |
| MATH 080..... | 4 | MATH 081..... | 4 |
| PHYS 013..... | 4 | PHYS 014..... | 4 |
| | | PHYS 018..... | 0 |
| | <hr/> 14-15 | | <hr/> 14-15 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------|-----------|-----------------|-----------|
| CHEM 001..... | 4 | CHEM 002..... | 4 |
| Elective..... | 3 | Literature..... | 3 |
| HIST 001 or 002..... | 3 | Elective..... | 3 |
| MATH 082..... | 4 | MATH 083..... | 4 |
| PHYS 104..... | 3 | PHYS 105..... | 3 |
| | <hr/> 17 | | <hr/> 17 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------|-----------|--------------------------------|-----------|
| Elective..... | 3 | Diverse Cultures elective..... | 3 |
| PHIL 050..... | 3 | PHIL 104..... | 3 |
| PHYS 111..... | 3 | Social-Behavioral Science..... | 3 |
| PHYS 131..... | 3 | Physics electives..... | 8 |
| PHYS 155..... | 2 | | |
| THEO 001..... | 3 | | |
| | <hr/> 17 | | <hr/> 17 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------------------|-----------|-----------------------------|-----------|
| Philosophy (upper division)..... | 3 | Literature..... | 3 |
| History/Social Science..... | 3 | Electives..... | 11 |
| Theology (second level)..... | 3 | Theology (third level)..... | 3 |
| Electives..... | 6 | | |
| | <hr/> 15 | | <hr/> 17 |

BACHELOR OF SCIENCE (FOR PHYSICS MAJORS, COMPUTATION)

This concentration is for students who wish to develop competence in using the computer as a scientific tool. To satisfy the requirements for a bachelor of science in physics, the five credit hours of physics electives must be upper division courses, excluding courses 190-199.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-------------|------------------------|-------------|
| ENGL 001. | 3 | ENGL 002. | 3 |
| Foreign Language. | 3-4 | Foreign Language. | 3-4 |
| MATH 080. | 4 | MATH 081. | 4 |
| PHYS 013. | 4 | PHYS 014. | 4 |
| | | PHYS 018. | 0 |
| | <hr/> 14-15 | | <hr/> 14-15 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|------------------------------|-----------|
| COSC 060. | 3 | COSC 061. | 3 |
| HIST 001 or 002. | 3 | History/Social Science. | 3 |
| MATH 082. | 4 | Elective. | 3 |
| PHYS 104. | 3 | MATH 083. | 4 |
| Elective. | 3 | PHYS 105. | 3 |
| | <hr/> 16 | | <hr/> 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|---------------------------------|-----------|
| COSC 065. | 3 | COSC 066. | 3 |
| PHIL 050. | 3 | PHIL 104. | 3 |
| MATH 121. | 3 | Literature. | 3 |
| PHYS 111. | 3 | PHYS 156. | 2 |
| PHYS 155. | 2 | Physics elective. | 3 |
| THEO 001. | 3 | Social-Behavioral Science. | 3 |
| | <hr/> 17 | | <hr/> 17 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-----------|---------------------------------|-----------|
| COSC 146. | 3 | COSC elective. | 3 |
| Philosophy (upper division). | 3 | Literature. | 3 |
| PHYS 131. | 3 | PHYS 149. | 3 |
| Theology (second level). | 3 | Physics elective. | 2 |
| Computer Science electives. | 6 | Theology (third level). | 3 |
| | <hr/> 18 | Diverse Cultures elective. | 3 |
| | | | <hr/> 17 |

BACHELOR OF SCIENCE (FOR PHYSICS MAJORS, PRE-MEDICAL/PRE-DENTAL)

Pre-medical and pre-dental students planning to major in physics should consult with the physics department major adviser and the pre-medical/pre-dental adviser as soon as possible after matriculation. To satisfy the requirements for a bachelor of science in physics, the eight credit hours of physics electives must be upper division courses, excluding courses 190-199.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|----------------|-----------|
| BIOL 001 | 3 | BIOL 090 | 3 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| MATH 080 | 4 | MATH 081 | 4 |
| PHYS 013 | 4 | PHYS 014 | 4 |
| | | PHYS 018 | 0 |
| | <hr/> 14 | | <hr/> 14 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-------------|------------------------|-------------|
| CHEM 001 | 4 | BIOL 002 | 3 |
| Foreign Language | 3-4 | CHEM 002 | 4 |
| MATH 082 | 4 | Foreign Language | 3-4 |
| PHYS 104 | 3 | MATH 083 | 4 |
| Social-Behavioral Science | 3 | PHYS 105 | 3 |
| | <hr/> 17-18 | | <hr/> 17-18 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|------------------------|-----------|
| CHEM 123 | 4 | BIOL 100* | 3 |
| HIST 001 or 002 | 3 | CHEM 124 | 4 |
| Literature | 3 | Physics elective | 3 |
| PHIL 050 | 3 | PHIL 104 | 3 |
| PHYS 111 | 3 | THEO 001 | 3 |
| | <hr/> 16 | | <hr/> 16 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-----------|---|-------------|
| Elective | 3 | Literature | 3 |
| Philosophy (upper division) | 3 | History/Social-Behavioral Science | 3 |
| PHYS 131 | 3 | Physics elective | 2-3 |
| PHYS 155 | 2 | Theology (third level) | 3 |
| Physics elective | 3 | Electives | 3 |
| Theology (second level) | 3 | Diverse Cultures elective | 3 |
| | <hr/> 17 | | <hr/> 17-18 |

* Required by some medical and dental schools.

BACHELOR OF SCIENCE (FOR PHYSIOLOGICAL SCIENCES MAJORS)

This major is for students with interests in physiology and neurobiology, growing fields with expanding job opportunities in academics, industry and hospital research. Graduates can go on to advanced education at medical, dental and graduate schools.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|------------------------|-----------|
| BIOL 001 | 3 | BIOL 002 | 3 |
| CHEM 001 | 4 | CHEM 002 | 4 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| Social-Behavioral Science | 3 | MATH 073 or 080 | 3-4 |
| <hr/> | | <hr/> | |
| 16-17 | | 16-18 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|-----------------------|-----------|
| CHEM 023 or 123 | 4 | BIOL 100 | 3 |
| Biological Sciences elective or lab course | 3 | CHEM 024 or 124 | 4 |
| MATH 166 | 3 | Literature | 3 |
| Literature | 3 | THEO 001 | 3 |
| PHIL 050 | 3 | HIST 001 or 002 | 3 |
| <hr/> | | <hr/> | |
| 16 | | 16 | |

*Junior**

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|---|-----------|
| PHYS 001 or 003 | 4 | BIOL 155 | 3 |
| BIOL 172 | 4 | BIOL 156 | 3 |
| BIOL 171 | 3 | PHYS 002 or 004 | 4 |
| PHIL 104 | 3 | History/Social-Behavioral Science | 3 |
| Elective | 3 | Diverse Cultures elective | 3 |
| <hr/> | | <hr/> | |
| 17 | | 16 | |

*Senior**

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------------------|-----------|-------------------------------------|-----------|
| BISC 125 or 135 | 4 | BISC 136** | 2 |
| BIOL 135 | 3 | Biological Sciences electives | 6 |
| Biological Sciences elective | 3 | PHIL 191*** | 3 |
| Theology (second level) | 3 | Theology (third level) | 3 |
| Elective | 3 | Elective | 3 |
| <hr/> | | <hr/> | |
| 16 | | 17 | |

* The courses listed in the junior and senior year may be interchanged.

** BISC 136 is recommended but not required.

*** THEO 175 is interchangeable with PHIL 191 for Medical Ethics.

**BACHELOR OF SCIENCE
(PRE-DENTAL SCHOLARS CURRICULUM, BIOLOGICAL SCIENCES MAJOR)**
Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|----------------|------------------------------------|-------------|
| BIOL 001 | 3 | BIOL 002 | 3 |
| CHEM 001 | 4 | CHEM 002 | 4 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| Foreign Language or elective ¹ | 3 or 4 | Foreign Language or elective | 3 or 4 |
| HIST 001 or 002 | 3 | MATH 073/080 | 3 or 4 |
| ARSC 007 Intro. to Human Care | 1 | BISC 030 (Optional) | 1 |
| | <hr/> 17 or 18 | | <hr/> 17-19 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------|-----------|-------------------------------|-----------|
| BIOL 090 | 3 | BIOL 100 | 3 |
| CHEM 023 | 4 | CHEM 024 | 4 |
| PHIL 050 | 3 | History/Social Science* | 3 |
| Literature | 3 | Literature | 3 |
| MATH 060 | 3 | THEO 001 | 3 |
| | <hr/> 16 | | <hr/> 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|---|-----------|
| BIOL 135 | 3 | BIOL 125 | 3 |
| Biological Sciences ² (upper div. lab)/Soc Sci* .. | 3 | Biological Sciences ² (upper div. lab)/Soc Sci* .. | 3 |
| PHYS 001 | 4 | PHYS 002 | 4 |
| PHIL 104 | 3 | PHIL (upper division) | 3 |
| Theology (second level) | 3 | Theology (third level) | 3 |
| | <hr/> 16 | | <hr/> 16 |

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

*Assumes completion of a dual application course for the UCCS requirement in Diverse Cultures

Notes:

1. If beginning a Foreign Language at Level 009 or 010, then only one (1) semester required. No language is required if exempt or waived.
2. Students must complete HIST 071 *and* either BIOL 156 or 171.

*Year One—Dental Curriculum**

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|----------------|-----------|
| DENT 401 | 3 | DENT 402 | 3 |
| DENT 411 | 2 | DENT 412 | 2 |
| DENT 420 | 3 | DENT 417 | 4 |
| DENT 430 | 3 | DENT 421 | 3 |
| DENT 440 | 1 | DENT 431 | 3 |
| BISC 413 | 4 | DENT 441 | 1 |
| BISC 414 | 4 | BISC 410 | 4 |
| | <hr/> 20 | BISC 415 | 3 |
| | | BISC 416 | 3 |
| | | | <hr/> 26 |

* 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 towards 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 towards the B.S. completion.

**BACHELOR OF SCIENCE
(PRE-DENTAL SCHOLARS CURRICULUM, PHYSIOLOGICAL SCIENCES MAJOR)**

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-------------|------------------------------------|-------------|
| BIOL 001 | 3 | BIOL 002 | 3 |
| CHEM 001 | 4 | CHEM 002 | 4 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| Foreign Language or elective ¹ | 3-4 | Foreign Language or elective | 3-4 |
| PSYC 001 | 3 | HIST 001 or 002 | 3 |
| ARSC 007 Intro to Human Care | 1 | BISC 030 (Optional) | 1 |
| | <hr/> 17-18 | | <hr/> 16-18 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------|-------------|-------------------------------|-----------|
| CHEM 023 | 4 | BIOL 100 | 3 |
| MATH 073/080 | 3-4 | CHEM 024 | 4 |
| THEO 001 | 3 | MATH 166 | 3 |
| Literature | 3 | Literature | 3 |
| PHIL 050 | 3 | Theology (second level) | 3 |
| | <hr/> 16-17 | | <hr/> 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|--|-----------|
| BIOL 172 | 4 | BIOL 155 | 3 |
| BIOL 135 | 3 | BIOL 156 or HIST 071 ^{*2} | 3 |
| BIOL 171 or HIST 071 ^{*2} | 3 | PHYS 002 | 4 |
| PHYS 001 | 4 | PHIL 191 | 3 |
| PHIL 104 | 3 | Theology (third level) | 3 |
| | <hr/> 17 | | <hr/> 16 |

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

* HIST 071 completes both the 2nd HIST in College Curriculum and the UCCS Diverse Cultures requirement

Notes:

1. If beginning a Foreign Language at Level 009 or 010, then only one (1) semester required. No language is required if exempt or waived.
2. Students must complete HIST 071 *and* either BIOL 156 or 171.

*Year One—Dental Curriculum**

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|----------------|-----------|
| DENT 401 | 3 | DENT 402 | 3 |
| DENT 411 | 2 | DENT 412 | 2 |
| DENT 420 | 3 | DENT 417 | 4 |
| DENT 430 | 3 | DENT 421 | 3 |
| DENT 440 | 1 | DENT 431 | 3 |
| BISC 413 | 4 | DENT 441 | 1 |
| BISC 414 | 4 | BISC 410 | 4 |
| | | BISC 415 | 3 |
| | | BISC 416 | 3 |
| | <hr/> 20 | | <hr/> 26 |

* 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 towards completion of the Bachelor of Science degree completion as well as for dental school requirements. Students must achieve a grade of C or better in those courses in order to count them towards the B.S. completion.

COURSE DESCRIPTIONS

BIOLOGICAL SCIENCES (BSCI)

Chairperson and Professor: Unsworth
Professor: Buchanan, Courtright, Downs, Fitts
(Wehr Distinguished Professor), Karrer (Clare Boothe Luce Professor), Munroe, Noel, Piacsek (Emeritus), Waring
Adjunct Professor: Schumann
Associate Professor: Edinger, Maki, Mylnieff, Schläppi, Stuart, Thomson *(Emeritus)*
Assistant Professor: Anderson, Blumenthal, Dorweiler, Wagner, Yang

MAJOR:

LECTURE COURSES: BIOL 001, 002, 100, 125, and 135. LAB COURSES: Any three from 090, 101, 126, 137, 156, 171, and 195. Majors are encouraged to take upper division laboratories, although one lower division laboratory may be used to satisfy this requirement. ELECTIVE COURSES: any four courses of two or more credits from the following: (a) any of the core laboratory courses not previously taken, including a second BIOL 195 course; (b) BIOL 040, 140, 142, 155, 160, 172, 176, 185; (c) by consent of instructor, departmental chairperson and Graduate School, any graduate course; (d) courses offered by other departments and acceptable to the Department of Biological Sciences as components of the major program. Cognate course requirements are: CHEM 001 and 002, 023 and 024 (or 123 and 124); PHYS 001 and 002 (or 003 and 004); and MATH 073 or 080 and one additional MATH or COSC course.

MINOR:

Six courses, including BIOL 001 and BIOL 002 plus two other courses offered in the biological sciences department. Two additional courses may be selected from three sources: a) the biological sciences department, and/or b) the chemistry department, and/or c) ANTH 106, PSYC 165, MATH 060.

TEACHING MINOR:

BIOL 001, 002 or 005, 090, 100, 125, 135, and 172.

HUMAN BIOLOGY MAJOR:

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 College of Arts and Sciences after four years of study.

Required courses: BIOL 001, 002, 100, 125, 135, and 172; ANTH 001 or 002; BISC 120, 125, and 130; PHTH 505, 512, 515, 518, 525, and 555; PSYC 001.

Cognate courses: (8 courses) CHEM 001 and 002, 023 and 024 (or 123 and 124); MATH 073 or 080, 060 or 164; PHYS 001 and 002 (or 003 and 004)

For information on physical therapy, please see the Physical Therapy section in this bulletin. Those students interested in the human biology major should contact the biological sciences department as soon as possible.

PHYSIOLOGICAL SCIENCES MAJOR:

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.

Required courses: BIOL 001, 002, 100, 135, 155, 156, 171 and 172; CHEM 001, 002, 023 (or 123), 024 (or 124); MATH 073 (or 080) and MATH 166; PHIL 191 (or THEO 175); PHYS 001 (or 003), 002 (or 004); BISC 125 (or 135); PSYC 001.

Elective courses: Any three of the following: BIOL 090, 125, 126, 137, 140, 142, 160, 176, 177, 185.

Recommended course: BISC 136.

▲BIOL 001. General Biology 1 3 sem. hrs.

Ecology. Theory of evolution. Taxonomy. Animal diversity. Structures of biological molecules. Cell structure and function. Vertebrate animal anatomy, physiology, and development. Offered fall term. 3 hrs. lec., disc.

BIOL 002. General Biology 2 3 sem. hrs.

Glycolysis and cellular respiration. Photosynthesis. Mitosis and meiosis. Mendelian and molecular genetics. Microbial diversity. Plant form and function. Offered spring term. 3 hrs. lec., disc. *Prereq:* BIOL 001 and CHEM 001; or cons. of instr.

▲BIOL 005. Biology for Non-Science Majors 3 sem. hrs.

Designed for non-science student, 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. Offered every term. 3 hrs. lec., disc. May be counted toward the Natural Science requirement of the College Curriculum.

BIOL 040. Ecology 3 sem. 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. Offered fall term. 3 hr. lec., disc. *Prereq:* BIOL 001 and BIOL 002; or BIOL 001 and BIOL 005; or cons. of instr.

BIOL 090. Principles of Biological Investigation 3 sem. hrs.

Introduction to selected instrumentation and techniques, including light microscopy, staining, aseptic procedures, and spectrophotometry. Other laboratory studies include: cell structure and function, restriction endonuclease effects on DNA, protein extraction and quantification, bacterial studies, vertebrate anatomy (gross and microscopic) and physiology of cardiovascular and nervous systems. Offered every term. 1 hr. lec., 3 hrs. lab. *Prereq:* BIOL 001.

BIOL 100. Biochemistry and the Molecular Basis of Biology 3 sem. 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. Offered spring term. 3 hrs. lec., disc.

Prereq: BIOL 002 and CHEM024; or CHEM024 which may be taken concurrently and cons. of instr.

BIOL 101. Experimental Molecular Biology 3 sem. hrs.

Purification, characterization and molecular analysis of proteins, nucleic acids, lipids and other biomolecules with emphasis on standard techniques widely used in research laboratories. Offered spring term. 1 hr. lec., 4 hrs. lab. *Prereq:* BIOL 100 and cons. of dept. ch.; BIOL 100 may be taken concurrently with consent of instructor.

BIOL 105. Proteins and Nucleic Acids: Structure, Function, and Evolution 3 sem. hrs.

The structural and biochemical properties of proteins and nucleic acids are examined with respect to biological function and evolution. Specific topics include methods of biochemical analysis, mechanisms of enzyme catalysis, oxygen transport, protein-nucleic acid interactions, DNA replication, transcription, RNA splicing and translation. Offered alternate fall terms. 2 hrs. lec., disc. *Prereq:* BIOL 100 and cons. of instr.

BIOL 110. Cellular Metabolism 3 sem. hrs.

The mechanisms of biological energy generation, with emphasis on processes associated with cellular membranes. The outlines, principles, coordination, and evolution of fundamental metabolic pathways. The emphasis is on metabolism that is shared by diverse groups of organisms. Offered as needed fall term. *Prereq:* BIOL 100 and cons. of instr.

BIOL 125. Genetics 3 sem. 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. Offered spring term. 3 hrs. lec. *Prereq:* BIOL 100.

BIOL 126. Experimental Genetics 3 sem. hrs.

Genetic organization, function, engineering, and inheritance in procaryotic and eucaryotic organisms. Offered spring term. 1 hr. lec., 4 hrs. lab. *Prereq:* BIOL 125 which may be taken concurrently and cons. of dept. ch.

BIOL 127. Evolution of Genetic Systems 3 sem. 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. Offered spring term. *Prereq:* BIOL 125; or cons. of instr.

▲ Indicates UCCS courses

BIOL 135. Cell Biology 3 sem. hrs.

The cell is the basic unit of life. How molecules within the cell cooperate to create a living system that feeds, moves, responds to stimuli, grows, and reproduces will be explored. The scientific evidence as well as the concepts that underlie our current understanding of cellular organization and function will be emphasized. Offered fall term. 3 hrs. lec., disc. *Prereq:* BIOL 100.

BIOL 137. Experimental Cell Biology

3 sem. hrs.

Molecular and biochemical studies of cellular structure and organization in relation to integrated cellular function. Offered fall term. 1 hr. lec., 4 hrs. lab. *Prereq:* BIOL 135 which may be taken concurrently and cons. of dept. ch.

BIOL 140. Advanced Ecology 3 sem. 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 040 and 140 will attend the same lectures but will meet in separate discussion sections; furthermore, students in BIOL 140 will be expected to complete assignments and exam material beyond those required for students enrolled in BIOL 040. May not be taken for credit by students who have completed BIOL 040. Offered fall term. 3 hrs. lec. *Prereq:* BIOL 001 and BIOL 002; or BIOL 001 and BIOL 005; or cons. of instr.

BIOL 142. Plant Biology 3 sem. hrs.

Despite their tremendous diversity in form, seed plants share many similarities in their cellular organization, metabolism, and development. Introduction to the organization, growth and development of vascular plants. Concepts of plant evolution and reproduction from algae to flowering plants. Application of genetic engineering to plants. Offered spring term. 3 hrs. lec. *Prereq:* BIOL 002; or BIOL 005.

BIOL 155. Neurobiology 3 sem. 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. Offered spring term. 3 hrs. lec., disc. *Prereq:* BIOL 001 and BIOL 002; or BIOL 001 and BIOL 005.

BIOL 156. Experimental Neurobiology

3 sem. 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 will be investigated. Offered spring term. 1 hr. lec., 4 hrs. lab. *Prereq:* BIOL 155 which may be taken concurrently and cons. of dept. ch.; or BIOL 172 and cons. of dept. ch.

BIOL 160. Animal Development 3 sem. 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. Offered spring term. 3 hrs. lec., disc. *Prereq:* BIOL 135; or cons. of instr.

BIOL 171. Experimental Physiology

3 sem. 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. Offered fall term. 1 hr. lec., 4 hrs. lab. *Prereq:* BIOL 172 which may be taken concurrently and cons. of dept. ch.

BIOL 172. Human Physiology 4 sem. hrs.

A basic course 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. Offered fall term. 4 hrs. lec., disc. *Prereq:* BIOL 001.

BIOL 176. Microbiology 3 sem. hrs.

Study of selected groups of microorganisms (algae, bacteria, and fungi). Topics include microbial morphology, taxonomy and metabolic activities, and the effect of microorganism on man and on the earth. Offered fall term. 3 hrs. lec., disc. *Prereq:* BIOL 100.

BIOL 177. Exercise Physiology 3 sem. 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. Offered alternate spring terms. *Prereq:* BIOL 172 or equivalent; or cons. of instr.

BIOL 185. Immunobiology 3 sem. 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. Offered fall term. 3 hrs. lec., disc. *Prereq:* BIOL 100.

BIOL 195. Independent Study

1-3 sem. hrs.

Experimental analysis of a selected topic under faculty supervision. Offered every term. *Prereq:* Sr. stndg. and cons. of instr. and cons. of dept. ch.

BIOL 198. Topics in Biology 1 sem. hr.

Analysis of selected topics under faculty supervision. Offered every term. *Prereq:* cons. of instr. and cons. of dept. ch.; Does not count toward requirements for biological sciences major. S/U grade assessment.

BIOCHEMISTRY AND MOLECULAR BIOLOGY

Required courses:

BIOL 001, 002, 100, 101, 125, 135—18 sem. hrs. CHEM 001, 002, 114, 123 (or 023), 124 (or 024), 131 (or 132 and 133)—23 sem. hrs.

Biological sciences laboratory course (upper division) or BIOL or CHEM 195 —3 sem. hrs. MATH 080, 081—8 sem. hrs.

PHYS 001, 002 (or 003, 004)—8 sem. hrs.

Elective courses. Any three of the following:

BIOL 105, 110, 126, 137, 140, 142, 155, 156, 160, 171, 172, 176, 185, 200, 210

CHEM 105, 115, 125, 129, 166

MATH 082, 083, 166

Students who take CHEM 132, 133, and MATH 082 are required to take only one additional elective in biological sciences, chemistry or mathematics.

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 credits will be identified.

CHEMISTRY (CHEM)

Chairperson and Professor: Wilkie
Professor: Cremer(Emeritus), Donaldson, Haworth, Hoffman (Emeritus), Kincaid, McKinney, Nakamoto (Emeritus), Ryan, Schrader (Research), Steinmetz, Tran
Associate Professor: Hossenlopp, Reid, Yi
Assistant Professor: Rathore, Sem
Visiting Assistant Professor: Bloch
Laboratory Supervisor: Ausman, Lukaszewski-Rose

MAJOR:

Forty-three hours, including CHEM 001, 002, 105, 106, 114, 115, 123, 124, 132, 133, 136 and six hours of electives. PHYS 013 (or 003) and 014 (or 004); MATH 080, 081 and 082 are also required for the major. (Students who select a chemistry major following their sophomore year may substitute CHEM 023, 024, for 123, 124, respectively.) French, German or Russian 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.

MINOR:

Five courses in chemistry (not including CHEM 008 or 195).

TEACHING MAJOR:

Thirty-four hours, including CHEM 001, 002, 114, 115, 123, 124, 132 and 133; four hours of chemistry electives and EDUC 155. Note that PHYS 001 (or 003) and 002 (or 004) and MATH 082 are prerequisites for CHEM 132 and 133.

Please refer to "Core Curriculum requirements for Education Majors" under "Graduation Requirements" in the College of Arts and Sciences section of this bulletin.

TEACHING MINOR:

Twenty-two hours, including CHEM 001, 002, 023 (or 123), or 024 (or 124) and 114 plus two hours of chemistry electives.

**BROAD FIELD SCIENCE
TEACHING MAJOR WITH
CHEMISTRY TEACHING MINOR:**

Sixty-two to 64 hours, including CHEM 001, 002, 023 (or 123), or 024 (or 124), 114, plus one upper division chemistry elective; BIOL 001, 002, 090; PHYS 001, 002, 008, 009, PHIL 130, COSC 050, MATH 073 (or 080). Students should see the department adviser for middle school/secondary teaching majors or minors to consult about the appropriate sequence of courses. It is also important that prospective teachers study carefully the School of Education section in this bulletin regarding university and state requirements (in addition to department requirements) for teacher certification.

▲CHEM 001. General Chemistry 1 4 sem. 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 001 and 002: Scientific notation, logarithms, the quadratic equation and proportionality. Offered every term. 3 hrs. lec., 3 hrs. lab., 1 hr. disc.

▲CHEM 002. General Chemistry 2 4 sem. hrs. Continuation of CHEM 001. 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. Offered every term. 3 hrs. lec., 3 hrs. lab., 1 hr. disc. *Prereq:* CHEM 001.

CHEM 004. General Chemistry for Chemistry Majors 4 sem. hrs.

Continuation of CHEM 001. 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 001.

CHEM 008. Chemistry - the World 3 sem. hrs. Introduction to chemical concepts and their applications to energy, the environment, air and water pollution, agriculture, food and drugs. Satisfies half of the Arts and Science core curriculum requirement. Course designed for non-science majors. Offered occasionally.

CHEM 023. Organic Chemistry 1 4 sem. 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. Offered every term. 3 hrs. lec., 4 hrs. lab. *Prereq:* CHEM 002; or CHEM 004.

CHEM 024. Organic Chemistry 2 4 sem. hrs. Continuation of CHEM 023. Extension of the chemistry of the remaining mono and poly-functional, and aromatic compounds. Bonding, stereochemistry, mechanisms, synthesis, applied spectroscopy, heterocycles and natural products. Laboratory: synthesis, instrumental application, organic qualitative analysis. Offered each spring. 3 hrs. lec., 4 hrs. lab. *Prereq:* CHEM 023; or CHEM 123.

CHEM 080. Lecture Only—Lower Division 1-3 sem. hrs.

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 lower division chemistry courses. *Prereq:* cons. of dept. ch.

CHEM 081. Laboratory Only—Lower Division 1-2 sem. hrs.

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 lower division chemistry courses. *Prereq:* cons. of dept. ch.

CHEM 105. Inorganic Chemistry 3 sem. 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. Offered annually. *Prereq:* CHEM 133.

CHEM 106. Inorganic Synthesis 2 sem. 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. Offered fall term. 1 lab-recit., 4 hrs. lab. *Prereq:* CHEM 105 which must be taken concurrently and CHEM 133; or

CHEM 114. Quantitative Analysis 4 sem. hrs. Fundamental theory of analytical chemistry covering principal gravimetric and titrimetric methods with introduction to electrochemical and spectrophotometric techniques and to separations. Offered annually. 3 hrs. lec., 4 hrs. lab. *Prereq:* CHEM 002; or CHEM 004.

CHEM 115. Instrumental Analysis 4 sem. hrs. Continuation of CHEM 114. Physical methods of analysis with emphasis on electrochemical, spectral and chromatographic methods. Offered annually. 3 hrs. lec., 4 hrs. lab. *Prereq:* CHEM 114 and CHEM 132 which must be taken concurrently and PHYS 004; or CHEM 114 and CHEM 132 which must be taken concurrently and PHYS 002.

CHEM 123. Organic Chemistry for Majors 1 4 sem. 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. Offered fall term. 3 hrs. lec., 1 lab-recit., 4 hrs. lab. *Prereq:* CHEM 002; or CHEM 004; Does not carry graduate credit for Chemistry graduate students.

CHEM 124. Organic Chemistry for Majors 2 4 sem. hrs.

Continuation of CHEM 123. Mechanisms, structure-reactivity relationships, and complex syntheses applied to the remaining principle classes of organic compounds. Laboratory: organic qualitative analysis. Offered spring term. 3 hrs. lec., 1 lab-recit., 4 hrs. lab. *Prereq:* CHEM 023; or CHEM 123; Does not carry graduate credit for chemistry graduate students.

CHEM 125. Introduction to Biochemistry 3 sem. hrs.

Bioenergetics, glycolysis, oxidative degradation, enzymes, metabolic controls, metabolism of carbohydrates, lipids and amino acids. Offered occasionally. *Prereq:* CHEM 024 and CHEM 131; or CHEM 024 and CHEM 132.

CHEM 129. Characterization of Organic Compounds 3 sem. 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. Offered occasionally. 2 hrs. lec., 4 hrs. lab. *Prereq:* CHEM 133.

CHEM 131. Physical Chemistry: Fundamentals with Applications in Biological Sciences 3 sem. hrs.

Biological Sciences 3 sem. 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. Offered fall term. *Prereq:* CHEM 002 or CHEM 004, AND MATH 073 or MATH 080, AND PHYS 002 or PHYS 004. Does not carry graduate credit for chemistry graduate students.

CHEM 132. Physical Chemistry 1 3 sem. hrs. Atomic and molecular structure, states of matter, spectroscopy, laws of thermodynamics, phase and chemical equilibrium, electrochemistry, transport properties, kinetics and macromolecules. Offered fall term. 3 hrs. lec. *Prereq:* CHEM 114 and CHEM 124 and MATH 082 and PHYS 002; or CHEM 114 and CHEM 124 and MATH 082 and PHYS 004; Does not carry graduate credit for Chemistry graduate students.

CHEM 133. Physical Chemistry 2 3 sem. hrs. Continuation of CHEM 132. Offered spring term. 3 hrs. lec. *Prereq:* CHEM 132; Does not carry graduate credit for Chemistry Graduate Students.

CHEM 136. Physical Chemistry Laboratory 2 sem. hrs.

Laboratory experiments illustrating the principles of physical chemistry. Offered spring term. 5 hrs. lab. *Prereq:* CHEM 132 and CHEM 133 which must be taken concurrently.

CHEM 160. Introduction to Polymer Science

3 sem. 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. Offered occasionally. *Prereq: CHEM 024 and CHEM 133.*

CHEM 166. Introduction to Quantum

Chemistry 3 sem. hrs.

Elementary quantum theory and applications to atoms, molecules, and chemical bonding. Offered occasionally. *Prereq: CHEM 133.*

CHEM 180. Lecture Only—Upper Division

1-3 sem. hrs.

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 181. Laboratory Only—Upper

Division 1-2 sem. hrs.

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 195. Independent Study 1-3 sem. hrs.

Analysis of a specific topic under faculty supervision. Offered every term. *Prereq: CHEM 133 and cons. of dept. ch.*

CHEM 196. Undergraduate Seminar

1-3 sem. hrs.

Emphasis on critical reading, analysis, and oral reporting of current literature sources in Chemistry. Offered occasionally. *Prereq: CHEM 133.*

CHEM 197. Selected Topics in Chemistry

1-3 sem. hrs.

Topics of current interest in inorganic, organic, analytical, physical or biochemistry. Offered occasionally. *Prereq: CHEM 133 which may be taken concurrently; or permission of instructor*

CHEM 199. Senior Thesis 2-4 sem. hrs.

Laboratory work leading to a thesis under the direction of an adviser. Offered every term. *Prereq: CHEM 133 and cons. of dept. ch.*

ECONOMICS (ECON)

Chairperson and Associate Professor: McGibany
Professor: Brush, Chowdhury, Danner (Emeritus), Davis, Nourzad, Smiley
Associate Professor: Breeden, D. Clark, S. Crane, Daniels, Toumanoff, Trestrail (Emeritus)
Assistant Professor: Wang
Visiting Assistant Professor: Habermalz
Adjunct Assistant Professor: Lephardt

MAJOR:

Twenty-seven hours, including ECON 043, 044, 110, 120, and fifteen additional hours of upper division work. In addition, courses in basic statistics (MATH 060 or equivalent) and mathematics (MATH 070 and 071, or MATH 080 and 081, or equivalent) are required. Students

contemplating graduate study in economics should take MATH 080 and 081.

MINOR:

Eighteen hours, including ECON 043 and 044 and twelve hours of upper division course work. In addition, a course in basic statistics (MATH 060 or equivalent) is required. Students minoring in economics are urged to satisfy the mathematics-logic-computer requirement of the College of Arts and Sciences by taking MATH 070 and 071 or MATH 080 and 081.

TEACHING MINOR:

Twenty-four hours, including ECON 043, 044, 110, 120 and also including a course in basic statistics (MATH 060 or equivalent), with additional courses to fill out the minor requirements from the following groups, one course from each group:

Group I: ECON 125, 126, 181, 182

Group II: ECON 134, 145, 146, 150, 160, 163

Group III: ECON 151, 154, 155, 156

Please refer to "Core Curriculum requirements for Education Majors" under "Graduation Requirements" in the College of Arts and Sciences section of this bulletin.

5-YEAR BA/MSAE 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) degree. For information, consult the Graduate Bulletin or contact the Department of Economics.

▲ECON 020. Introduction to Economics

3 sem. 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 043. Principles of Microeconomics

3 sem. 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 044. Principles of Macroeconomics

3 sem. 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 043.*

ECON 105. Intern Grading Period in Economics 3 sem. hrs.

Prereq: Jr. stndg. and Consent Required; S/U grade assessment. Consent of Internship Director.

ECON 108. Applied Business Economics

3 sem. 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 108 and ECON 110 for credit. *Prereq: ECON 043 and ECON 044 and MANA 028 or equivalent.*

ECON 110. Applied Microeconomic Analysis

3 sem. 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 043 and ECON 044 and MATH071 or equivalent; Students may not take both ECON 108 and ECON 110 for credit.*

ECON 120. Intermediate Macroeconomic Analysis 3 sem. 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. Offered annually. *Prereq: ECON 043 and ECON 044 and MATH 071 or equivalent.*

ECON 125. American Business History

3 sem. hrs.

Survey of the development of American business from the Colonial era to the present. Industries and individual firms will be examined as well as entrepreneurs and their role in the development of American business, and the role of governments in the development of American businesses. *Prereq: ECON 043 and ECON 044.*

ECON 126. American Economic History

3 sem. hrs.

Briefly surveys the pre-1900 development of the American economy and then examines 20th Century changes in the agricultural, manufacturing, transportation, finance, and trade and communications sectors. Prosperity and depression in the 1920 to 1940 period will be examined in depth. Concludes with an examination of the distribution of income and wealth and the changing role of government in the 20th century American economy. *Prereq: ECON 043 and ECON 044.*

ECON 134. Public Policies Toward American Industry 3 sem. 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 043 and ECON 044.*

ECON 145. Public Finance 3 sem. hrs.
Examination of such current topics as the growth of government spending, taxes, and deficits. Proper role of the state, centralization and decentralization, the impact of government decisions on the distribution of income and the efficient allocation of resources. *Prereq: ECON 043 and ECON 044.*

ECON 146. Urban Economics 3 sem. hrs.
Economic role of cities. Forces behind urban growth. Problems of central city economic decline and urban poverty. Urban land and housing markets. Suburbanization of employment and population. The urban fiscal crisis. *Prereq: ECON 043 and ECON 044.*

ECON 150. Money, Banking, and Monetary Policy 3 sem. 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 043 and ECON 044.*

ECON 151. International Economic Issues 3 sem. 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 043 and ECON 044; Credit not given if ECON 154 or ECON 156 is already completed for credit.*

ECON 154. International Currency Markets 3 sem. 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 043 and ECON 044.*

ECON 155. Comparative Economic Development 3 sem. 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 043 and ECON 044.*

ECON 156. International Trade 3 sem. 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 043 and ECON 044.*

ECON 160. Economics of Labor Markets 3 sem. 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 043 and ECON 044.*

ECON 163. Environmental and Natural Resource Economics 3 sem. 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 043 and ECON 044.*

ECON 174. Introduction to Mathematical Economics 3 sem. 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 043 and ECON 044 and MATH070 or equivalent and MATH071 or equivalent.*

ECON 175. Introduction to Econometrics 3 sem. 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 043 and ECON 044 and MATH060 or equivalent; or ECON 043 and ECON 044 and MANA 028 or equivalent.*

ECON 181. Economics and Ethics 3 sem. hrs.
Interaction of economic principles and understanding with ethical principles and understanding in contemporary society. Analysis of affluence's impacts on character development, the practice of moderation and justice, and the meaning of spiritual poverty. Applications of this ethic to critical features of modern industrial society. *Prereq: ECON 043 and ECON 044 and PHIL 104.*

ECON 182. Economics and Law 3 sem. 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 043 and ECON 044.*

ECON 195. Independent Study 1-4 sem. hrs.
Prereq: cons. of dept. ch.

ECON 196. Undergraduate Seminar 3 sem. hrs.
Specific titles to be announced in the *Timetable of Classes*. Offered occasionally. *Prereq: Jr. stndg. and ECON 043 and ECON 044.*

ECON 199. Senior Thesis 2 sem. hrs.
With department approval. Seniors may write a thesis under direction of an adviser. *Prereq: cons. of dept. ch.*

ENGLISH (ENGL)

Chairperson and Professor: Machan
Professor: Bates, Block, DeFalco (*Emeritus*), M. Gillespie, Hoeveler, Hribal, McCanles (*Emeritus*), Rivero
Associate Professor: Asp (*Emerita*), Bodden, Boly, Chappell, Curran, Duffy, Hathaway, Jeffers, Keiser, Krueger, Ratcliffe
Assistant Professor: Blair, Karian, Keiser, Nowacek, Sandy, Sorby, Spargo, Su, Wadsworth
Adjunct Professor: Watson
Adjunct Associate Professor: Bieganowski, P. Gillespie
Adjunct Assistant Professor: Heman, Jablonsky, Picard, Schreibersdorf
Lecturer: Anselment, Batchelor, Ciemnieski, Cook, DuVernay, Foran, Herman, Mankowski, Mattek, Mattson, Peterson, Prochaska, Quade, Roy, Sjostrom, Tallon, Taylor, Wheeler

MAJOR:

Thirty hours (excluding ENGL 001 and 002), divided according to the following groups.
Group I, Surveys (9 hrs.): any three lower-division literature surveys, at least two of which must be historical (022, 023, 032, 033).
Group II, Language Study (3 hrs.): 101, 102, 103, or 170.
Group III, Individual Authors (3 hrs.): 114, 119, or 165.
Group IV, English or American Literature before 1800 (3 hrs.): 114, 115, 117, 118, 119, 120, 121, 150; or 165, 171, 173, 177, 198 when the course deals with pre-1800 English or American literature.
Group V, Shakespeare (3 hrs.): 160.
Group VI, Electives (9 hrs.): any three upper-division courses, no more than one of which may be a "writing" course.
See Director of Undergraduate Studies for a requirements checklist.

MINOR:

Eighteen hours (excluding ENGL 001 and 002), divided according to the following groups:
Group I, Surveys or Introductions (6 hrs.): any two sophomore courses.
Group II, Shakespeare (3 hrs.): 160.
Group III, Electives (9 hrs.): any three upper-division literature courses.
See Director of Undergraduate Studies for a requirements checklist.

TEACHING MAJOR:

Thirty-three hours (excluding ENGL 001 and 002), divided according to the following groups:
Group I, Historical Surveys (6 hrs.): at least one of which must be British.

Group II, Language Study (3 hrs.): 101, 102, 103 or 170.

Group III, One upper-division elective in British literature (3 hrs.).

Group IV, Advanced Composition (3 hrs.): 104.

Group V, Rhetoric (3 hrs.): either 106 or 192 (4 sem. hrs.).

Group VI, Multicultural (3 hrs.): either 159 or 177.

Group VII, Shakespeare (3 hrs.): 160.

Group VIII, Methods (3 hrs.): 190.

Group IX, Criticism (3 hrs.): 193.

Group X, One upper-division elective in American literature (3 hrs.).

Students should consult the departmental adviser for English Education about the appropriate sequence of courses. It is also essential to consult the School of Education section of this bulletin regarding university and state requirements for teacher certification. A teaching major is required for middle school/secondary teacher certification.

Please refer to "Core Curriculum requirements for Education Majors" under "Graduation Requirements" in the College of Arts and Sciences section of this bulletin.

TEACHING MINOR:

Twenty-four hours (excluding ENGL 001 and 002), divided according to the following groups:
Group I, Language Study (3 hrs.): 101, 102, 103 or 170.

Group II, One upper-division elective in British Literature (3 hrs.).

Group III, Advanced Composition (3 hrs.): 104.

Group IV, Rhetoric (3 hrs.): either 106 or 192 (4 sem. hrs.).

Group V, Multicultural (3 hrs.): either 159 or 177.

Group VI, Shakespeare (3 hrs.): 160.

Group VII, Methods (3 hrs.): 190.

Group VIII, One upper-division elective in American Literature (3 hrs.).

Students should consult the departmental adviser for English Education about the appropriate sequence of courses. It is also essential to consult the School of Education section of this bulletin regarding university and state requirements for teacher certification.

WRITING-INTENSIVE ENGLISH

Thirty-six hours (excluding ENGL 001 and 002), divided according to the following groups:

Group I, Surveys or Introductions (6 hrs.): any two sophomore courses.

Group II, Shakespeare (3 hrs.): 160.

Group III, Individual Authors (3 hrs.): 114, 119, 165.

Group IV, English or American Literature before 1800 (3 hrs.): 114, 115, 117, 118, 119, 120, 121, 150; or 165, 171, 173, 177, 198 when the course deals with pre-1800 English or American literature.

Group V, Language Study (3 hrs.): 101, 102, 103, or 170.

Group VI, Electives (6 hrs.): two upper-division literature courses.

Group VII, Writing (12 hrs.): 104 (required); 105, 106, 191, 192, or 197; or 173, 196, 198 when the course focuses on writing; or,

if not used in Group V, 101, 102, 103, or 170; or no more than two among JOUR 111, 112, 113, 114, 151, 155 (all of which have ENGL 104 as a prerequisite; 151 and 155 also have JOUR 100 as a prerequisite).

See director of Undergraduate Studies for a requirements checklist.

COURSES FOR FRESHMEN**▲ENGL 001. Rhetoric and Composition 1**
3 sem. hrs.

An introduction to the basic principles of rhetoric and composition. Investigation and practice of the methods of college writing. Offered every term.

▲ENGL 002. Rhetoric and Composition 2
3 sem. 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. Offered every term. *Prereq: ENGL 001 or equivalent.*

ENGL 005. Honors English 1 3 sem. 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. Offered fall term. *Prereq: Consent of Program Director; Limited to Honors Program students. Counts as equivalent of ENGL 022 for English majors and minors.*

ENGL 006. Honors English 2 3 sem. hrs.

Continuation of ENGL 005, with texts selected from such writers as Adams, Austen, the Brontës, 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. Offered spring term. *Prereq: Limited to Honors Program students. Counts as equivalent of ENGL 023 for English majors and minors.*

COURSES FOR SOPHOMORES**▲ENGL 022. Survey of English Literature 1**
3 sem. 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. Typically offered fall term. *Prereq: ENGL 001 or equivalent and ENGL 002 or equivalent.*

▲ENGL 023. Introduction to British Literature 2 3 sem. hrs.

Continuation of ENGL 022, 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 Brontës, G. Eliot, Joyce, Shaw, the Shelleys, Tennyson, Woolf, and Wordsworth. Typically offered spring term. *Prereq: ENGL 001 or equivalent and ENGL 002 or equivalent.*

▲ENGL 032. Introduction to American Literature 1 3 sem. 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. Typically offered fall term. *Prereq: ENGL 001 or equivalent and ENGL 002 or equivalent.*

▲ENGL 033. Introduction to American Literature 2 3 sem. hrs.

Continuation of ENGL 032, 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. Typically offered spring term. *Prereq: ENGL 001 or equivalent and ENGL 002 or equivalent.*

▲ENGL 042. Introduction to Literature: Fiction 3 sem. 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. Offered every term. *Prereq: ENGL 001 or equivalent and ENGL 002 or equivalent.*

▲ENGL 043. Introduction to Literature: Drama 3 sem. 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. Offered every term. *Prereq: ENGL 001 or equivalent and ENGL 002 or equivalent.*

▲ENGL 044. Introduction to Literature: Poetry 3 sem. 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. Offered every term. *Prereq: ENGL 001 or equivalent and ENGL 002 or equivalent.*

COURSES FOR JUNIORS AND SENIORS**LANGUAGE, RHETORIC, AND COMPOSITION****ENGL 101. History of the English Language**
3 sem. 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 con-

sidered. *Prereq: Jr. stndg; May not be counted as Literature requirement in Arts & Sciences College Curriculum.*

ENGL 102. Structure of the English Language 3 sem. 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: Jr. stndg; May not be counted as Literature requirement in Arts & Sciences College Curriculum.*

ENGL 103. English Linguistics 3 sem. hrs. An introduction to linguistics that concentrates on English. Topics include language acquisition, grammatical structure, social and regional variation, historical change, and pragmatics. *Prereq: Jr. stndg; May not be counted as Literature requirement in Arts & Sciences College Curriculum.*

ENGL 104. Advanced Composition 3 sem. 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: Jr. stndg. and ENGL 002 or equivalent; May not be counted as Literature requirement in Arts & Sciences College Curriculum.*

ENGL 105. Writing for the Professions 3 sem. 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 résumés, letters, memos, reports, visual aids, and oral presentations. *Prereq: Jr. stndg. and ENGL 002 or equivalent; May not be counted as Literature requirement in Arts & Sciences College Curriculum.*

ENGL 106. The Art of Rhetoric: Theory and Application 3 sem. 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: Jr. stndg. and ENGL 002 or equivalent; May not be counted as Literature requirement in Arts & Sciences College Curriculum.*

LITERATURE IN HISTORICAL PERSPECTIVE

ENGL 114. Chaucer 3 sem. hrs.

A study of Chaucer's works with emphasis on his techniques, thematic concerns, cultural contexts, and place in literary history. *Prereq: Jr. stndg.*

ENGL 115. British Literature to 1500 3 sem. 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: Jr. stndg.*

ENGL 117. Renaissance Literature: The 16th Century 3 sem. 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: Jr. stndg.*

ENGL 118. Renaissance Literature: The 17th Century 3 sem. 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: Jr. stndg.*

ENGL 119. Milton 3 sem. hrs.

A study of Milton's major poetry and prose in the context of his place in 17th-century England. *Prereq: Jr. stndg.*

ENGL 120. The Ages of Dryden and Pope: 1660-1744 3 sem. 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: Jr. stndg.*

ENGL 121. The Age of Johnson: 1744-1790 3 sem. 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: Jr. stndg.*

ENGL 130. The Romantic Period: 1790-1837 3 sem. 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: Jr. stndg.*

ENGL 131. Victorian Literature 3 sem. hrs.

A study of the major poets and prose writers between 1837 and 1900, including such authors as Arnold, the Brontës, the Brownings, Carlyle, Dickens, G. Eliot, Hardy, Newman, Ruskin, and Tennyson. *Prereq: Jr. stndg.*

ENGL 145. The Modernist Period in British Literature 3 sem. 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: Jr. stndg.*

ENGL 146. The Postmodernist Period in British Literature 3 sem. 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: Jr. stndg.*

▲ENGL 147. Post-Colonial Literature 3 sem. 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: Jr. stndg.*

ENGL 148. British Drama from Shaw to the Present 3 sem. hrs.

A survey of significant works from the late 19th century onward with emphasis on plays that reconfigured dramatic conceptions and redefined the parameters of theatrical productions. Writers studied generally include Beckett, Churchill, Devlin, Friel, Lady Gregory, McGuinness, O'Casey, Orton, Osborne, Pinter, Shaw, Stoppard, Synge, Wilde, and Yeats. *Prereq: Jr. stndg.*

ENGL 150. Colonial and American Literature from the Beginnings to 1798 3 sem. 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: Jr. stndg.*

ENGL 151. American Literature from 1798 to 1865 3 sem. 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: Jr. stndg.*

ENGL 152. American Literature from 1865 to 1914 3 sem. 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 Chesnut, Chopin, Crane, Dickinson, Dreiser, Harper, James, Twain, and Wharton. *Prereq: Jr. stndg.*

ENGL 155. Twentieth-Century American Literature: The Modern Period 3 sem. 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: Jr. stndg.*

ENGL 156. The Contemporary Period in American Literature: 1945 to Present 3 sem. 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: Jr. stndg.*

ENGL 158. American Drama 3 sem. hrs.

A study of American drama with emphasis on form and function of genre. Writers studied generally include Hansberry, Herne, Kushner, Mamet, Miller, O'Neill, Shepard, Williams, and Wilson. *Prereq: Jr. stndg.*

▲ENGL 159. Race, Ethnicity, and Identity in American Literature and Culture 3 sem. 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: Jr. stndg.*

ENGL 160. Shakespeare's Major Plays

3 sem. 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. Offered every term. *Prereq: Jr. stndg.*

ENGL 165. Studies of Individual Authors

3 sem. hrs.

Studies of the works of selected individual authors, usually within biographical, historical, intellectual, and/or cultural contexts. Authors studied have included Austen, the Brontës, the Brownings, Cheever and Carver, Conrad, Frost, Hardy and Hopkins, Heaney, Melville, Wharton and Stein, and Yeats. Consult *Timetable of Classes* or the English Department's Web site or its course descriptions booklet for specific author(s). *Prereq: Jr. stndg.*

SPECIAL COURSES**ENGL 170. Studies in Language** 3 sem. hrs.

A detailed study of some aspect of language or language study, including stylistics, sociolinguistics, introductory linguistics, Old English, or semiotics. Consult *Timetable of Classes* or the English Department's Web site or its course descriptions booklet for the specific topic. *Prereq: Jr. stndg; May not be counted as Literature requirement in Arts and Sciences College Curriculum.*

ENGL 171. Studies in Literature and Culture 3 sem. 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 *Timetable of Classes* or the English department's Web site or its course descriptions booklet for specific topic. *Prereq: Jr. stndg.*

ENGL 173. Studies in Genre 3 sem. 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, and the Epic, the Court Romance, and the American Western. Consult *Timetable of Classes* or the English Department's Web site or its course descriptions booklet for specific topic.

Prereq: Jr. stndg.

▲ENGL 177. Studies in Race and/or Ethnic Literature 3 sem. 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 *Timetable of Classes* or the English Department's Web site or its course descriptions booklet for specific topic.

Prereq: Jr. stndg.

ENGL 185. Survey of Women's Literature 3 sem. 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 Brontës, Burney, G. Eliot, Julien of Norwich, Kempe, Morrison, O'Connor, Shelley, Silko, Woolf, and Wroth. *Prereq: Jr. stndg.*

ENGL 186. Studies in Women and Literature 3 sem. 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 *Timetable of Classes* or the English Department's Web site or its course descriptions booklet for specific topic. *Prereq: Jr. stndg.*

ENGL 190. Teaching English in the Secondary School

3 sem. 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. stndg. and EDUC 079; or Jr. stndg. and EDUC 095; May not be counted as Literature requirement in Arts & Sciences College Curriculum. Admission to the School of Education required.*

ENGL 191. Creative Writing Workshop

3 sem. hrs.

A workshop in the composition of fiction, poetry, or play writing, depending on the instructor. Offered every semester in at least one genre. May be repeated for credit if taken in a different genre. *Prereq: Jr. stndg. and ENGL 002 or equivalent; May not be counted as Literature requirement in Arts & Sciences College Curriculum.*

ENGL 192. The Processes of Writing

4 sem. 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: Jr. stndg. and ENGL 002 or equivalent; May not be counted as Literature requirement in Arts & Sciences College Curriculum.*

ENGL 193. Literary Criticism 3 sem. 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: Jr. stndg.*

ENGL 194. Literature in Film 3 sem. 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 *Timetable of Classes* or the English Department's Web site or its course descriptions booklet for specific topic. *Prereq: Jr. stndg.*

ENGL 195. Independent Study 3 sem. 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. Offered every term. *Prereq: Jr. stndg. and cons. of instr. and cons. of dept. ch.*

ENGL 196. Undergraduate Seminar

3 sem. hrs.

Advanced practice in the techniques and discipline of intensive literary study or writing. Consult *Timetable of Classes* or the English Department's Web site or its course descriptions booklet for specific topic. *Prereq: Jr. stndg. and cons. of instr.*

ENGL 197. Writing Internship 3 sem. 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. Offered every term. *Prereq: Jr. stndg. and cons. of instr.; May not be counted as Literature requirement in Arts & Sciences College Curriculum. S/U grade assessment.*

ENGL 198. Special Topics in Literature or Writing 3 sem. 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, Writing for Nonprofit Organizations, the Vikings, and Meaning and Identity. Consult *Timetable of Classes* or the English Department's Web site or its course descriptions booklet for specific topic. *Prereq: Jr. stndg.*

ENGL 199. Senior Thesis

1-3 sem. hrs.

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. Offered every term. *Prereq: Jr. stndg. and cons. of instr. and cons. of dept. ch.*

ENGLISH AS A SECOND LANGUAGE PROGRAM (ESLP)

The Office of Campus International Programs provides advanced English language courses for students of other language backgrounds who need further formal instruction in spoken or written English for success in their Marquette academic studies. Students whose evidence of English language ability does not assure adequate proficiency are required to take an English language placement test after arrival at Marquette.

The results of the placement tests are used to assign students to any appropriate English language courses. English language (ESLP) courses are offered in the fall and spring terms. There are also sections of English 001 and 002 designated for these students. Up to six credits of ESLP course work may be counted toward degree requirements in all undergraduate colleges except Engineering.

ESLP 082. Composition 3 sem. hrs.

Advanced study of written English. Extensive practice in writing expository and argumentative essays; review of paragraph development; study skills associated with writing a composition; selection of topic, thesis statement, outlining. Offered every term. *Prereq: Consent of Program Director; May not register as audit or S/U option.*

ESLP 083. Reading 3 sem. hrs.

Advanced reading in English. Extensive practice in reading comprehension, vocabulary development, increasing reading speed, study skills associated with reading university-level texts and reference materials: Previewing, reading for thorough comprehension, critical reading. Offered every term. *Prereq: Consent of Program Director; May not register as audit or S/U option.*

ESLP 084. Listening Comprehension

3 sem. hrs.

Advanced listening comprehension in English. Extensive practice in listening to lectures, taking lecture notes, listening to different styles and different speakers of American English; work on study skills associated with listening and note taking; outlining, reviewing lecture notes. Offered every term. *Prereq: Consent of Program Director; May not register as audit or S/U option.*

ESLP 182. Expository Writing for Non-Native Speakers 2 sem. hrs.

Supplementary instruction and practice in composition for non-native speakers of English concurrently enrolled in the specially designated section of ENGL 001. Students receive two hours each week of further explanation and/or practice in composition processes, assigned readings, and reviewing grammar difficulties. Registration in this course is required of all students registering for the specially designated section of ENGL 001. Offered every term. *Prereq: Consent of Program Director; May not register as audit or S/U option.*

FINE ARTS (FIAR)

Marquette has developed a unique cross-registration program with nearby Milwaukee Institute of Art and Design (MIAD). The choice of two minors, Studio Art and Art History, gives you the opportunity to enhance your skills as an artist increase your knowledge of the arts and fulfill your desire to create. The number of credit hours required to fulfill these minors varies between 18-21 credits. It is recommended that you declare your intention to minor in art at the start of the sophomore year by completing a Declaration of Art Minor form in your college office. Further information about these two minors can be obtained through contacting either the College of Arts and Sciences or the College of Communication.

If you cannot complete a minor, you may take any of the MU/MIAD courses listed below as electives in either the Bachelor of Arts or Bachelor of Science college curriculum. Students must be enrolled at Marquette with full-time status to register for FIAR courses. As a full-time student you are eligible to cross-register for a maximum of six credits each semester. However you must be able to meet any prerequisites before registering for a course.

The tuition cost of enrolling in these courses is included in your full-time tuition. There are other nominal course material fees that you will need to pay directly to MIAD before the start of classes.

(Asterisk courses noted below indicate courses taken at Marquette University. All other courses are offered at the Milwaukee Institute of Art and Design, 273 East Erie Street.)

MINOR IN STUDIO ART

Program One

(Recommended for Advertising Majors)

* HIST 007 History of Western Art 1
* HIST 008 History of Western Art 2
FIAR 004 Fundamentals of Design
FIAR 073 Communication Design 1
FIAR 074 Communication Design 2
* ADPR 143 Marketing Communications Design and Production

Program Two

(Recommended for Theater Arts Majors)

* HIST 007 History of Western Art 1
* HIST 008 History of Western Art 2
FIAR 003 Fundamentals of Drawing and FIAR 004 Fundamentals of Design
FIAR 031 Space, Form and Materials
And TWO courses listed here:
FIAR 061 Painting 1
FIAR 062 Painting 2
FIAR 065 Sculpture - Semester 1
FIAR 066 Sculpture - Semester 2

Program Three

(Recommended for any major)

* HIST 007 History of Western Art 1
* HIST 008 History of Western Art 2
FIAR 003 Fundamentals of Drawing and FIAR 004 Fundamentals of Design
And TWO courses (in sequence) from a single MIAD fine arts discipline listed below:
Drawing (FIAR 063, 064)
Painting (FIAR 061, 062)
Figure Sculpture (FIAR 071, 072)
Photography (FIAR 075, 076)
Printmaking (FIAR 033, 034; 035, 036; 037, 038)

Program Four

(Recommended for any major)

* HIST 007 History of Western Art 1
* HIST 008 History of Western Art 2
FIAR 003 Fundamentals of Drawing or FIAR 004 Fundamentals of Design
FIAR 031 Space, Form and Materials
FIAR 065 Sculpture - Semester 1
FIAR 066 Sculpture - Semester 2

MINOR IN ART HISTORY

* HIST 007 History of Western Art 1
* HIST 008 History of Western Art 2
* PHIL 120 Philosophy of Art & Beauty
Plus three courses from the following:
FIAR 180 History of Modern Design
FIAR 182 Art Since 1955
FIAR 183 History of Photography
FIAR 184 History of Sculpture

FIAR 001. Basic Drawing 3 sem. hrs.
MIAD # [F100] MIAD Fee

FIAR 003. Fundamentals of Drawing 3 sem. hrs.

A one term course in which students meet twice weekly to develop their drawing skills. One half of the course places primary emphasis on depicting the human form; the other half places emphasis on depicting objects in space. While experimentation and imaginative probing are important and essential aspects of this course, the main thrust of the course is analytical seeing and drawing with traditional media. Fee paid to MIAD.
MIAD # [F120] MIAD Fee

FIAR 004. Fundamentals of Design 3 sem. hrs.

A one term course that presents the basic elements and principles of two-dimensional design and color as a foundation for all the visual arts. The course broadens the beginning student's understanding of design in terms of concepts, methods and materials, and includes development and improvement of technical and media skills. The theory and application of line, shape, mass, texture, composition, and color are all explored through a variety of processes and materials. Systems of design, and making good ideas visual are emphasized. Fee paid to MIAD.
MIAD # [F121] MIAD Fee

FIAR 011. Two-Dimensional Composition

3 sem. hrs.

Two-Dimensional Composition is a problem solving course that presents the fundamental elements and principles of two-dimensional design as a foundation for all the visual arts. The course broadens the beginning student's understanding of composition in terms of concept, methods and materials and includes development and improvement of technical and media skills. This course introduces the student to the computer lab and digital imaging. Fee paid to MIAD.

MIAD # [F110] MIAD Fee

FIAR 021. Color Theory/Composition

3 sem. hrs.

This course furthers the visual exploration begun in FIAR 011 with a concentration on color, one of the elements of design. The study of color theories in conjunction with studio problems allows the student to investigate the physical, perceptual and psychological properties of color. Color is explored as a phenomenon of light, as an optical occurrence, as pigment with specific mixing properties and as an element with powerful expressive and symbolic potential. A range of tools that include traditional/materials/mediums and digital imaging are used in increasingly complex problem-solving. *Prereq: FIAR 011; MIAD # [F111] MIAD Fee*

FIAR 031. Space, Form and Materials

3 sem. 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. Fee paid to MIAD.

MIAD # [F130] MIAD Fee

FIAR 033. Introduction to Intaglio -**Semester 1** 3 sem. hrs.

Covers altering the plate's surface and the use of various grounds, inks, acids, plates, paper and resists. The techniques of dry point, mezzotint, etching and monotype are examined.

MIAD # [FA260] MIAD Fee

FIAR 034. Introduction to Intaglio -**Semester 2** 3 sem. hrs.

Explores Collagraph (print made from collage intaglio), monoprint, relief etching, multiple-plate color printing and viscosity. *Prereq: FIAR 033; MIAD # [FA261] MIAD Fee*

FIAR 035. Introduction to Lithography -**Semester 1** 3 sem. hrs.

Covers methods and techniques of fine art lithography. Students work on stone and aluminum plates as part of the hand process of lithography. The lithographic press will be used in the technical aspect of lithographing. Direct drawing, transfer drawing, and photo transfer are examined.

MIAD # [FA270] MIAD Fee

FIAR 036. Introduction to Lithography -**Semester 2** 3 sem. hrs.

Emphasizes color printing, color separation technique, registration and printing processes. Students will examine objectives on usage of papers, editioning and storing of prints.

*Prereq: FIAR 035; MIAD # [FA271] MIAD Fee***FIAR 037. Introduction to Screenprinting -****Semester 1** 3 sem. hrs.

Covers screen printing approaches using water-based inks and other materials. Basic equipment and printing techniques such as monotypes, block out process, photographic stencil and positive and negative methods are examined. *Prereq: FIAR 003 and FIAR 004; MIAD # [FA230] MIAD fee*

FIAR 038. Introduction to Screenprinting 2

3 sem. hrs.

Emphasizes both technical proficiency and interpretations of color, texture and form into new visual language of imagery. Students will be inventive and explore the broad range of possibilities, which this medium offers.

*Prereq: FIAR 037.***FIAR 051. Visual Statement**

1.5 sem. hrs.

In Visual Statement, students are made aware of the interconnections which link the visual arts. The means of visual communication and artistic expression are examined. Each course emphasizes concept, process and creativity. Subject matter and media are exploited as a means of obtaining conceptual goals. Fee paid to MIAD.

MIAD # [F150-159] MIAD fee

FIAR 061. Painting 1 3 sem. hrs.

Painting materials, techniques, theory and practice are explored by working in oil and acrylic from direct observation. Critiques, lectures, assignments and demonstrations support studio instruction enabling the student to conceive, comprehend and compose visual ideas within a stable pictorial space. *Prereq: FIAR 003 and FIAR 004; MIAD # [F220] MIAD Fee*

FIAR 062. Painting 2 3 sem. hrs.

Indirect methods and glazing medium and techniques are introduced and practiced within traditional and alternative painting philosophies. 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 003 and FIAR 004 and FIAR 061; MIAD # [F 221] MIAD Fee*

FIAR 063. Drawing - Semester 1 3 sem. hrs.

This drawing course challenges students with various 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. Wide variety of drawing subjects, including the anatomy of the head and neck. *Prereq: FIAR 003 and FIAR 004; MIAD # [FA200] MIAD Fee*

FIAR 064. Drawing - Semester 2 3 sem. hrs.

This drawing course challenges students with various 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. Wide variety of draw-

ing subjects, including the anatomy of the head and neck. *Prereq: FIAR 063; MIAD # [FA201] MIAD Fee*

FIAR 065. Sculpture - Semester 1 3 sem. hrs.

This year-long course focuses on form, material and structure while introducing a wide range of additive and reductive casting methods with hand and power tools. Problems investigate the potential of wood, assemblage, oxyacetylene and arc welding, and plastics carving. Sculptural concepts of static and kinetic structure, scale, light, illusion, objectness and function elaborate those of line, plane, volume and space. Creative problem solving will be furthered by slide lectures, demonstrations, group critiques, visiting artists and field trips.

*Prereq: FIAR 031; MIAD # [FA 250] MIAD Fee***FIAR 066. Sculpture - Semester 2**

3 sem. hrs.

This year-long course focuses on form, material and structure while introducing a wide range of additive and reductive casting methods with hand and power tools. Problems investigate the potential of wood, assemblage, oxyacetylene and arc welding, and plastics carving. Sculptural concepts of static and kinetic structure, scale, light, illusion, objectness and function elaborate those of line, plane, volume and space. Creative problem solving will be furthered by slide lectures, demonstrations, group critiques, visiting artists and field trips.

*Prereq: FIAR 065; MIAD # [FA 251] MIAD Fee***FIAR 071. Figure Sculpture - Semester 1**

3 sem. hrs.

The first course in figurative sculpture is an introduction to the figure as a sculptural concern. Working from the figure, students learn a variety of basic techniques including the safe use of tools, modeling in both oil-based and terra cotta clays, molding, basic casting, carving, mounting and finishing. The figure also serves as a basis for resolving aesthetic questions in three dimensions. Through studying the figure, students begin to solve problems of composition, texture, line, scale and balance. Projects include both full and partial figure studies. *Prereq: FIAR 003 and FIAR 031; or FIAR 004 and FIAR 031; MIAD # [FA 252] MIAD Fee*

FIAR 072. Figure Sculpture - Semester 2

3 sem. hrs.

The first course in figurative sculpture is an introduction to the figure as a sculptural concern. Working from the figure, students learn a variety of basic techniques including the safe use of tools, modeling in both oil-based and terra cotta clays, molding, basic casting, carving, mounting and finishing. The figure also serves as a basis for resolving aesthetic questions in three dimensions. Through studying the figure, students begin to solve problems of composition, texture, line, scale and balance. Projects include both full and partial figure studies. *Prereq: FIAR 071; MIAD # [FA 253] MIAD Fee*

FIAR 073. Communication Design 1

3 sem. hrs.

Fundamentals of communication design are introduced to the student with theoretical and applied studies in design, problem solving, communication, and verbal and visual presen-

tation. *Prereq:* FIAR 004; MIAD # [DS200] MIAD Fee

FIAR 074. Communication Design 2

3 sem. 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 073; MIAD # [DS201] MIAD Fee

FIAR 075. Principles of Photography

3 sem. hrs.

An introduction to 35mm photography. This course covers basic principles of all forms of photography, with an emphasis on black and white photography. 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. Students must have a 35mm camera with adjustable aperture and shutter speed controls and a light meter. Fee paid to MIAD.

MIAD # [FA 280] MIAD Fee

FIAR 076. Digital Imaging 3 sem. 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:* FIAR 075; MIAD # [FA281] MIAD Fee

FIAR 098. Topics in Fine Arts

0-3 sem. hrs.

Prereq: Consent Required; Consent of Associate Dean, College of Arts and Sciences.

FIAR 180. History of Modern Design

3 sem. hrs.

The course outlines major trends in graphic design, illustration, industrial design and interior design from the beginning of industrialization to the present day. Divided into three sections, the course traces the philosophical, social and cultural concerns of Victorian design, Art Nouveau, the Bauhaus, Art Deco, Pop Art and Post-Modernism within the context of the United States, Europe and Japan. *Prereq:* HIST 007 and HIST 008; MIAD # [AH213] MIAD fee

FIAR 182. Art Since 1955 3 sem. hrs.

This course offers an in-depth study of contemporary art makers and movements, and 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 reviews major trends in art following World War II and follows with a close examination of art from the 1950's through the present day. *Prereq:* HIST 007 and HIST 008; MIAD # [AH212] MIAD fee

FIAR 183. History of Photography 3 sem. hrs.

Students have the opportunity to study the origins and traditions of photography in both artistic and technological terms. The course

will trace the evolution of photography from its beginnings in 1839 to the present. Major figures in photography will be studied and important critical and aesthetic issues examined.

Prereq: HIST 007 and HIST 008; MIAD # [AH215] MIAD Fee

FIAR 184. History of Sculpture 3 sem. hrs.

This course is an examination of three-dimensional art with emphasis on the past 200 years. Focus on issues such as form and space, materials, figurative and non-figurative expressions, installations and performance will be examined. Students will also have the opportunity to study in depth the work of key figures in the history of sculpture. *Prereq:* HIST 007 and HIST 008; MIAD # [AH316] MIAD Fee

FIAR 191. Computer Studio 1 3 sem. 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. stndg; MIAD # [DS230] MIAD Fee

FIAR 192. Computer Studio 2 3 sem. 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. FIAR 191 is a prerequisite for FIAR 192. *Prereq:* Jr. stndg. and FIAR 191; MIAD # [DS231] MIAD Fee

FIAR 198. Upper Division Topics in Fine Arts 0-3 sem. hrs.

Prereq: Consent Required; Consent of Associate Dean, College of Arts and Sciences MIAD Fee.

FOREIGN LANGUAGES AND LITERATURES

Chairperson and Associate Professor:

Castañeda

Professor: González-Pérez, Velleman

Associate Professor: Aguilú de Murphy, Beall, Benda, G. Carrillo, Davies Cordova, Jamison, Kraemer, Lacy, Lafouge, Marquardt, Montante, Pasero, Pustejovsky, Sánchez de la Calle, S. Taylor

Assistant Professor: Afinoguénova, Dale, Daneri, Gendron, Joda

Adjunct Assistant Professor: Dávila-Keller

Adjunct Instructor: Banhidi, C. Carrillo, C. Coffey, Escudero, Fossier, Krainz, Lencina, Petrusa

MAJOR IN CLASSICAL LANGUAGES:

Twenty-nine hours, including fifteen hours in reading Latin beyond 002, eight hours in Greek 001 and 002, and six additional hours in Latin and/or Greek. Three hours may be taken in a classical culture/civilization course.

MAJOR IN CLASSICAL STUDIES:

Thirty-six hours, including Latin 003 and 004 or Greek 003 and 004, History 007 and 131,

Philosophy 112, and twenty-one elective hours in ancient languages, civilization or tradition.

Electives may be fulfilled with such courses as: HIST 138, POSC 080, POSC 100, THEO 101, THEO 120, THAR 150, and CMST 156, depending on course content.

MAJOR IN FRENCH:

Twenty-seven hours, excluding 001 through 010, and including courses FREN 040, 082, 100, 182, 185, and any one course elective in French or Francophone literatures, as well as nine credits in one of the two tracks described below. A maximum of one course may be taken in English (FREN 148).

Track I: French and Francophone Literatures, Cultures and Language

Three upper division courses chosen from FREN 102, 115-130, 134, 142, 148, and 198.

Track II: Business and Culture

Two required upper division courses in French for the Professions, FREN 152 and 153; and one elective chosen from FREN 102 and ** FREN 148 or 198 (**when dealing with business related topics).

MAJOR IN GERMAN:

Twenty-seven hours, excluding courses 001 through 010, and including courses 040, 082, 115, 165, 182, and 12 additional hours in upper division courses. One course (101 or 148) in English may be counted toward the major.

MAJOR IN SPANISH: SPANISH LANGUAGE AND LITERATURE:

Twenty-seven hours, excluding courses SPAN 001-010, and including courses SPAN 082, 090, 100 or 102, 105, 106, 182, 193 or 194, and six additional hours in upper division Spanish courses, excluding 101, 148 and 158.

Bilingual students are excluded from Spanish courses 001-090, and must complete SPAN 100 or 102, 183, 184, 193 or 194, for a total of 12 hours. The remaining fifteen credit hours may be fulfilled by any upper division Spanish courses, excluding 101, 105, 106, 148, 152, 154, 158, and 182.

MAJOR IN SPANISH: SPANISH FOR THE PROFESSIONS:

Twenty-seven hours, excluding courses SPAN 001-010, and including courses SPAN 082, 090, 102, 103, 182, and SPAN 152 and 153 or SPAN 154 and 155, and six additional hours in upper division Spanish courses, excluding 101, 148 and 158.

Bilingual students are excluded from Spanish courses 001-090, and must complete SPAN 102, 103, 153 or 155, 183 and 184. The remaining twelve credit hours may be fulfilled with any upper division Spanish courses, excluding 101, 105, 106, 148, 152, 154, 158, and 182.

MINOR IN CLASSICAL LANGUAGES:

Eighteen to twenty hours, including six hours in reading Latin or Greek beyond 002, six to eight hours in the elementary or intermediate level of the other language, and six hours in further reading of Latin and/or Greek authors.

MINOR IN CLASSICAL STUDIES:

Twenty-four hours, including Latin 003 and 004 or Greek 003 and 004, History 007 and 131, Philosophy 112, and nine elective hours in ancient languages, civilization, or tradition.

Electives may be fulfilled with such courses as: HIST 138, POSC 080, POSC 100, THEO 101, THEO 120, THAR 150, and CMST 156, depending on course content.

MINOR IN FRENCH:

Eighteen hours, excluding courses 001 through 010, and including courses FREN 040, 082, 182, any one course elective in Francophone literatures and cultures, and two open electives. A maximum of one course may be taken in English (FREN 101 or 148).

MINOR IN GERMAN:

Fifteen hours, excluding courses 001 through 010, and including courses 040, 082, 115 and six additional hours in upper division courses. One course (101 or 148) in English may be counted toward the minor.

MINOR IN SPANISH:

SPANISH LANGUAGE AND LITERATURE

Fifteen hours, excluding courses SPAN 001-010, and including courses SPAN 082, 090, 100 or 102, 105 or 106, and three additional hours in upper division Spanish courses, excluding 101, 148 and 158.

Bilingual students are excluded from Spanish courses 001-090, and must complete one civilization course (100, 102, 103), 183, 184, and six additional hours in upper division courses, excluding 101, 105, 106, 148, 152, 154, 158, and 182.

SPANISH FOR THE PROFESSIONS:

Fifteen hours, excluding courses SPAN 001-010, and including courses SPAN 082, 090, 102, 152 and 153 or 154 and 155.

Bilingual students are excluded from Spanish courses 001-090, and must complete SPAN 102, 153 or 155, 183 and 184. The remaining three credit hours may be fulfilled with any upper division Spanish course, excluding 101, 105, 106, 148, 152, 154, 158, and 182.

GENERAL REQUIREMENTS FOR ELEMENTARY, MIDDLE SCHOOL AND SECONDARY EDUCATION FOREIGN LANGUAGE TEACHING MAJORS:

Students should see their academic major adviser in the Department of Foreign Languages and Literatures to consult about the appropriate sequence of courses and fulfillment of the general requirements listed below. It is also important that prospective teachers see the School of Education adviser and study carefully the School of Education section of this bulletin regarding university and state requirements (in addition to department requirements for teacher certification).

Please refer to "Core Curriculum Requirements for Education Majors" under

"Graduation Requirements" in the College of Arts and Sciences section of this bulletin.

In addition to completing the regular teacher education sequence and student teaching, Elementary, Middle School and Secondary Education Teaching Majors must also fulfill the following general requirements:

TEACHING MAJORS IN FRENCH, GERMAN AND SPANISH:

1. Completion of FOLA 162: Methods of Teaching a Second Language.
2. Maintenance of a minimum 3.00 grade point average in the foreign language major.
3. Passing an official Oral Proficiency Interview (OPI) in the language approaching the level of Advanced-Low on the ACTFL Oral Proficiency Scale before being permitted to register for FOLA 162.
4. Presentation of a portfolio of written tasks demonstrating a minimum proficiency of Advanced-Low on the ACTFL Written Proficiency Scale. The contents must include evidence of the three modes of written communication: interpersonal, interpretive and presentational, in addition to a reflective journal on culture composed during the study abroad program and/or intensive immersion experience.
5. Residence in a country in which the target language 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.

TEACHING MAJORS IN LATIN:

1. Completion of FOLA 162: Methods of Teaching a Second Language.
2. Maintenance of a minimum 3.00 grade point average in Latin courses.
3. Passing a competence examination in Latin before being permitted to register for FOLA 162.
4. Presentation of a portfolio of written work demonstrating proficiency in Latin.

PROGRAM REQUIREMENTS FOR TEACHING MAJORS:

TEACHING MAJOR IN FRENCH

Thirty hours beyond the intermediate level, including courses FREN 040, 082, 100, 142, 182, 185, any one course elective in Francophone literatures, as well as nine credits from the following courses from **Track I: French and Francophone Literatures, Cultures and Language**: FREN 102, 115-130, 134, 148 and 198.

TEACHING MAJOR IN GERMAN

Thirty hours beyond the intermediate level, including courses GERM 040, 082, 100, 115, 142, 165, 182, 185, and six additional hours in upper division German courses excluding 148.

The German section will offer a colloquium on a monthly basis to prepare Teaching Majors. This colloquium will undertake 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. Students should inquire about this colloquium as soon as they declare a Teaching Major in German. This will be required even of those students who have spent an extended period in a German-speaking country.

TEACHING MAJOR IN SPANISH

Thirty hours beyond the intermediate level, including courses SPAN 082, 090, 100 or 102, 105, 106, 142, 182, 185, 193 or 194, and three additional hours in upper division Spanish courses, excluding 101, 148, and 158.

Bilingual students are excluded from Spanish courses 001-090, and must complete thirty hours, including courses SPAN 100 or 102, 142, 183, 184, 185, 193 or 194. The remaining twelve credit hours may be fulfilled by any upper division Spanish courses, excluding SPAN 101, 105, 106, 148, 152, 154, 158, and 182.

TEACHING MAJOR IN LATIN:

Thirty credit hours beyond the intermediate level, including courses LATI 055, 056, 110, 134, 170, 174, 175, 182, and six additional credit hours in other upper division Latin courses.

TEACHING MINOR IN LATIN:

Fifteen credit hours beyond the intermediate level, including courses LATI 055, 056, 182, and six additional credit hours in other upper division Latin courses exclusive of courses in translation.

Foreign Language (FOLA)

FOLA 098. Topics in Foreign Language or Culture 1-3 sem. hrs.

An umbrella course to offer occasional additional lower division topics in those languages which have limited offerings (Italian, Japanese) or for occasions where a specific subject matter fits under none of the languages presently offered, either because it is cross-language or the language/culture is not a regular part of our curriculum. Offered occasionally.

FOLA 148. Special Topics in Women's Literature 3 sem. hrs.

Offers instruction in a major area of literary study concerned with women writers and/or women's issues in foreign literatures. Offered occasionally. Counts toward Women's Studies minor; may not be counted toward fulfillment of the foreign language requirement.

FOLA 162. Methods of Teaching a Second Language 4 sem. hrs.

Theory and technique of classroom presentation, in addition to clinical experience in high school or college setting. Required of all foreign language teaching majors and minors. Offered alternate years. *Prereq: EDUC 079; or EDUC 095; Clinical experience requirement: three hours per week for a total of forty hours. Advanced Low Performance on the Oral Proficiency Interview, and Admission to the School of Education required.*

FOLA 195. Independent Study 1-3 sem. hrs. Offered every term. *Prereq: cons. of dept. ch.*

FOLA 196. Undergraduate Seminar

1-3 sem. hrs.

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 in the *Timetable of Classes*. Does not count toward fulfillment of academic or teaching major or minor. Offered occasionally. *Prereq: Jr. stndg; or cons. of dept. ch.*

French (FREN)**FREN 001. Elementary 1** 4 sem. hrs.

Introduction to the French language. Fundamentals of comprehension, speaking, reading and writing. Offered annually. No previous study of French or by departmental placement. Students who have studied two or more years of French in high school and are placed in FREN 001, must register for FREN 009.

FREN 002. Elementary 2 4 sem. hrs.

Continuation of FREN 001, plus supplementary reading. Offered annually. *Prereq: FREN 001.*

FREN 003. Intermediate 1 3 sem. hrs.

Grammar review, oral and written practice, and more intensive reading. Offered annually. *Prereq: FREN 002; or FREN 009; or by departmental placement.*

FREN 004. Intermediate 2 3 sem. hrs.

Continuation of French 003. Offered annually. *Prereq: FREN 003.*

FREN 005. French Placement Credit

3 or 6 sem. hrs.

A student who places at FREN 010 and completes FREN 010 with a grade of B or better will be eligible for three additional credit hours at a grade of S to be designated as FREN 005. Students exempted from the foreign language requirement will be eligible for six additional credit hours at a grade of S to be designated as FREN 005 upon completion with a grade of B or better of a third year course to be designated by the department.

S/U grade assessment Credit earned for FREN 005 cannot be used toward the major or minor.

FREN 009. Intensive Elementary French

4 sem. hrs.

A single-semester first-year intensive French course designed for students who have had two or more years of high-school French and who do not place in an intermediate second-year college level course. Emphasis is placed on acquisition of key features of French 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. Offered annually. *Prereq: Two or more years of high school French and departmental placement.*

FREN 010. Concentrated Intermediate

4 sem. 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. Offered annually. *Prereq: FREN 002 with minimum grade of AB; or FREN 009 with minimum grade of AB; or by departmental placement.*

FREN 040. Developing Critical Reading**Skills in French** 3 sem. hrs.

Intensive practice in reading comprehension of authentic contemporary French texts. Vocabulary enrichment. May not be counted as part of the Arts and Sciences literature curriculum requirement. Offered every term. *Prereq: FREN 004; or FREN 010; or by departmental placement.*

FREN 082. Composition and Conversation 1

3 sem. hrs.

Practice in the oral and written use of the French language. Systematic review of grammatical structure and idiomatic expression. Offered every term. *Prereq: FREN 004; or FREN 010; or by departmental placement.*

FREN 083. Conversational French 1 sem. hr.

Students meet twice weekly. Guided conversation on contemporary topics. Offered every term. *Prereq: FREN 082; S/U grade assessment. May be taken up to 3 times. Does not count towards French major or minor or teaching major.*

▲FREN 100. French Civilization 3 sem. hrs.

Historical development of the social, institutional, intellectual, and artistic life of France from inception to the present. Duplicate credit will not be given for FREN 100 and FREN 101. Offered annually. *Prereq: FREN 040; or by departmental placement*

▲FREN 101. French Contributions to**Western Civilization** 3 sem. hrs.

Historical development of the social, institutional, intellectual and artistic life of France from inception to the present. In English. Duplicate credit will not be given for FREN 100 and FREN 101. Offered occasionally. Knowledge of French not required. May not be counted toward fulfillment of teaching major or the foreign language requirement.

FREN 102. Francophone Civilizations and Cultures 3 sem. hrs.

Historical, social, institutional, intellectual and artistic contributions of Francophone cultures throughout the world including Europe, Africa, North America, the Caribbean and Asia. Offered occasionally. *Prereq: FREN 040; or by departmental placement.*

▲FREN 115. The Middle Ages (1050-1450)

3 sem. hrs.

Major aspects of the period through literature, the arts and film (in modern French). Offered occasionally. *Prereq: FREN 040 and FREN 082.*

▲FREN 116. Sixteenth Century Literature

3 sem. hrs.

Major aspects of the Renaissance through literature, the arts and film. Offered occasionally. *Prereq: FREN 040 and FREN 082.*

FREN 117. Seventeenth Century Literature

3 sem. hrs.

Major aspects of French Classicism through literature, the arts and film. Offered occasionally. *Prereq: FREN 040 and FREN 082.*

FREN 118. Eighteenth Century Literature

3 sem. hrs.

Major aspects of the Enlightenment through literature, the arts and film. Offered occasionally. *Prereq: FREN 040 and FREN 082.*

▲FREN 119. Nineteenth Century Literature

3 sem. hrs.

Major aspects of the period through literature, the arts and film. Offered occasionally. *Prereq: FREN 040 and FREN 082.*

FREN 120. Twentieth Century Literature

3 sem. hrs.

Major aspects of the period through literature, the arts and film. Offered occasionally. *Prereq: FREN 040 and FREN 082.*

FREN 129. Film as Genre 3 sem. hrs.

The examination and analysis of French cinema as it relates to literary genres and thematic motifs. Offered occasionally. *Prereq: FREN 040 and FREN 082.*

FREN 130. French Canadian Culture through Literature 3 sem. hrs.

"Quebecois" and "Acadian" cultures in the Americas as interpreted by their histories, languages, literatures and arts. Offered occasionally. *Prereq: FREN 040 and FREN 082.*

FREN 134. Practicum in**French/Francophone Theatre** 3 sem. hrs.

Study of a French/Francophone dramatist and production of a play. Offered occasionally. *Prereq: FREN 182.*

FREN 142. Phonetics 3 sem. hrs.

Articulation of French individual sounds and speech patterns. Offered alternate years. *Prereq: FREN 082.*

FREN 148. French Literature in English Translation* 3 sem. hrs.

Readings in English translation of selected masterpieces of French and Francophone literature. Offered occasionally. Knowledge of French not required. May not be counted toward fulfillment of teaching major, or the foreign language requirement.

FREN 152. French for the Professions

3 sem. hrs.

An introduction to French terminology and practice in such fields as business, journalism, communications, etc. Offered occasionally. *Prereq: FREN 082.*

FREN 153. Advanced French for the Professions 3 sem. hrs.

Advanced French for international business in the French-speaking world. Offered occasionally. *Prereq: FREN 152.*

FREN 182. Composition and Conversation 2

3 sem. hrs.

Advanced study of oral and written French. Emphasis on idiomatic fluency. Offered annually. *Prereq: FREN 082; or by departmental placement.*

FREN 185. Advanced Grammar 3 sem. hrs.

Intense review of the morphology and syntax of written and oral standard French. Offered annually. *Prereq: FREN 182.*

FREN 195. Independent Study

1-3 sem. hrs.

Offered every term. *Prereq: cons. of dept. ch.*

FREN 198. Topics in Language and Literature

1-3 sem. hrs.

Subject to be announced. Offered occasionally. *Prereq: FREN 040; and at least one literature course; or consent of instructor.*

FREN 199. Senior Thesis 2 sem. hrs.

Introductory thesis guidance for approved students under the direction of a departmental adviser. Offered occasionally. *Prereq: cons. of dept. ch.*

** May be counted as part of the Arts & Sciences literature college curriculum requirement, but not as part of the foreign language requirement.*

German (GERM)

GERM 001. Elementary 1 4 sem. 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. Offered fall term. No previous study of German; or by departmental placement. Students who have studied two or more years of German in high school and are placed in GERM 001, must register for GERM 009.

GERM 002. Elementary 2 4 sem. hrs.

Continuation of GERM 001, plus supplementary reading. Offered spring term. *Prereq: GERM 001.*

GERM 003. Intermediate 1 3 sem. hrs.

Grammar review, oral and written practice, and more intensive reading. Offered fall term. *Prereq: GERM 002; or GERM 009; or by departmental placement.*

GERM 004. Intermediate 2 3 sem. hrs.

Continuation of GERM 003. Offered spring term. *Prereq: GERM 003.*

GERM 005. German Placement Credit

3 or 6 sem. hrs.

A student who places at GERM 010 and completes GERM 010 with a grade of B or better will be eligible for three additional credit hours at a grade of S to be designated as GERM 005. Students exempted from the foreign language requirement will be eligible for six additional credit hours at a grade of S to be designated as GERM 005 upon completion with a grade of B or better of a third year course to be designated by the department. S/U grade assessment. Credit earned for GERM 005 cannot be used toward the major or minor.

GERM 009. Intensive Elementary German

4 sem. hrs.

A single-semester first-year intensive German course designed for students who have had two or more years of high-school German and who do not place in an intermediate second-year college level course. Emphasis is placed on acquisition of key features of German 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. Offered annually. Two or more years of high school German and departmental placement.

GERM 010. Concentrated Intermediate

4 sem. 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. Offered annually. *Prereq: GERM 002 with minimum grade of AB; or GERM 009 with minimum grade of AB; or by departmental placement.*

GERM 040. Intensive Critical Reading in**German** 3 sem. 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. Offered occasionally. *Prereq: GERM 004; or GERM 010; or by departmental placement.*

GERM 082. Composition and Conversation 1

3 sem. hrs.

Practice in the oral and written use of the German language. Offered every term. *Prereq: GERM 004; or GERM 010; or cons. of dept. ch.; or by departmental placement.*

GERM 083. Conversational German

1 sem. 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, minor, or teaching major. Offered occasionally. *Prereq: GERM 004; or GERM 010; S/U grade assessment*

GERM 100. Culture and Civilization

3 sem. hrs.

Historical development of the social, intellectual and artistic life of the German speaking nations. Duplicate credit will not be given for GERM 100 and GERM 101. Offered occasionally. *Prereq: GERM 004; or GERM 010; or by departmental placement.*

GERM 101. German Contributions to**Western Civilization** 3 sem. hrs.

Readings in English translation dealing with the culture and civilization of German speaking countries. Duplicate credit will not be given for GERM 100 and GERM 101. Offered occasionally. Knowledge of German not required.

▲GERM 115. The Modern German Short**Story** 3 sem. hrs.

An introduction to textual analysis and interpretation concentrating on the post-World War II German short story in historical and cultural context. Offered annually. *Prereq: GERM 040; or cons. of dept. ch.*

GERM 126. German Drama 3 sem. hrs.

Significant German drama from Lessing to the present. Offered occasionally. *Prereq: GERM 115.*

GERM 135. The German Novelle 3 sem. hrs.

Novelle: the genre and representative works. Offered occasionally. *Prereq: GERM 115.*

GERM 142. Phonetics and Advanced**Speaking Practice** 3 sem. hrs.

German sounds and speech patterns. Offered alternate years. *Prereq: GERM 082.*

▲GERM 148. German Literature in English**Translation*** 3 sem. hrs.

Readings in English translation of principal authors from the Middle Ages to the present day. Offered occasionally. Knowledge of German not required; may not be counted toward fulfillment of the foreign language requirement.

GERM 152. German for the Professions

3 sem. hrs.

An introduction to German terminology and practice in such fields as business, journalism, communications, etc. Offered occasionally. *Prereq: GERM 082; or cons. of dept. ch.*

GERM 165. Special Topics in German**Literature** 3 sem. hrs.

Survey of selected themes, forms or periods in German literature. Subject to be announced. Offered annually. *Prereq: Jr. stndg. and GERM 115.*

GERM 172. Workshop in Translation

1 sem. 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.*

GERM 182. Composition and Conversation 2

3 sem. hrs.

Continuation of GERM 082. Offered annually. *Prereq: GERM 082; or by departmental placement.*

GERM 185. Advanced Grammar 3 sem. hrs.

Grammatical structure of the German language in context with other linguistic areas. Offered annually. *Prereq: GERM 082.*

GERM 190. German Literature from the**Twelfth to the Eighteenth Centuries**

3 sem. hrs.

Principal works of the Medieval, Renaissance, and Baroque periods. Offered occasionally. *Prereq: GERM 115.*

GERM 191. Eighteenth Century Literature

3 sem. hrs.

Authors and works of the Enlightenment, Storm and Stress, and Classicism, including Goethe's late works. Offered occasionally. *Prereq: GERM 115.*

GERM 192. Nineteenth Century Literature

3 sem. hrs.

Romanticism and Realism. Offered occasionally. *Prereq: GERM 115.*

GERM 193. Modern Literary Trends 1

3 sem. hrs.

Naturalism, Neo-Romanticism and Expressionism Offered occasionally *Prereq: GERM 115.*

GERM 194. Modern Literary Trends 2

3 sem. hrs.

German literature since World War I. Offered occasionally. *Prereq: GERM 115.*

GERM 195. Independent Study

1-3 sem. hrs.

Offered every term. *Prereq: cons. of dept. ch.*

GERM 198. Topics in Language or Literature

1-3 sem. hrs.

Subject to be announced. Offered occasionally.
Prereq: Sr. stndg; or cons. of dept. ch.

GERM 199. Senior Thesis 2 sem. hrs.

Introductory thesis guidance for approved students under the direction of a departmental adviser. Offered occasionally. *Prereq: cons. of dept. ch.*

** May be counted as part of the Arts & Sciences literature college curriculum requirement, but not as part of the foreign language requirement.*

Greek (GREE)

GREE 001. Elementary 1 4 sem. hrs.

Classical Greek. Morphology and syntax. Readings. Offered annually.

No previous study of Greek; or by departmental placement.

GREE 002. Elementary 2 4 sem. hrs.

Continuation of GREE 001. Offered annually.
Prereq: GREE 001.

GREE 003. Intermediate 1 3 sem. hrs.

Review of morphology and syntax. Extensive reading. Offered annually. *Prereq: GREE 002; or by departmental placement.*

GREE 004. Intermediate 2 3 sem. hrs.

Continuation of GREE 003. Offered annually.
Prereq: GREE 003; or by departmental placement.

GREE 005. Greek Placement Credit

3 or 6 sem. hrs.

A student who places at GREE 004 and completes GREE 004 with a grade of B or better will be eligible for three additional credit hours at a grade of S to be designated as GREE 005. S/U grade assessment. Credit earned for GREE 005 cannot be used toward the major or minor.

GREE 009. Greek and Latin Origins of Medical and Specialized Terminology 2 sem. 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. Offered occasionally. Knowledge of Greek not required.

GREE 108. Greek and Roman Epic Poetry* 3 sem. hrs.

Origins and development, with readings in translation of the individual works of Homer, Apollonius of Rhodes and Vergil. Offered occasionally. Knowledge of Greek not required; does not count toward Greek minor or the foreign language requirement.

GREE 118. Classical Foundations of European Literature* 3 sem. hrs.

Greek and Latin literary masterpieces in translation. The classical tradition in European literature. Offered occasionally. Knowledge of Greek not required; does not count toward Greek minor or the foreign language requirement.

GREE 138. Greek and Roman Literature in English Translation* 3 sem. hrs.

Readings in English translation from Greek and Latin authors. Offered occasionally. Knowledge of Greek not required; does not count toward Greek minor or the foreign language requirement.

GREE 148. Greek and Roman Tragedy* 3 sem. hrs.

Origins and development, with readings in translation of individual plays of Aeschylus, Sophocles, Euripides, and Seneca. Offered occasionally. Knowledge of Greek not required; does not count toward Greek minor or the foreign language requirement.

GREE 158. Greek and Roman Comedy* 3 sem. hrs.

Origins and development, with readings in translation of the individual plays of Aristophanes, Menander, Plautus and Terence. Offered occasionally. Knowledge of Greek not required; does not count toward Greek minor or the foreign language requirement.

GREE 170. Greek Civilization and Art 3 sem. hrs.

Life in ancient Greece. Major achievements of the Greeks in the creative arts. Offered occasionally. Knowledge of Greek not required.

▲GREE 175. Mythology* 3 sem. hrs.

Classical myths and legends in ancient literature and religion. Offered occasionally. Knowledge of Greek not required; does not count toward fulfillment of the foreign language requirement.

GREE 178. Greek and Roman Rhetoric* 3 sem. hrs.

Origins and development, with readings in translation of the individual works of Aristotle, Cicero, Seneca Rhetor, Antiphon, Lysias, Demosthenes and others. Offered occasionally. Knowledge of Greek not required; does not count toward Greek minor or the foreign language requirement.

GREE 195. Independent Study

1-3 sem. hrs.

Offered every term. *Prereq: cons. of dept. ch.*

GREE 198. Topics in Language and Literature 1-3 sem. hrs.

Subject to be announced. Offered occasionally.
Prereq: Sr. stndg; or cons. of dept. ch.

** May be counted as part of the Arts & Sciences literature college curriculum requirement, but not as part of the foreign language requirement.*

Italian (ITAL)

ITAL 001. Elementary 1 4 sem. hrs.

Introduction to the Italian language. Fundamentals of comprehension, speaking, reading and writing. Offered annually. No previous study of Italian; or by departmental placement.

ITAL 002. Elementary 2 4 sem. hrs.

Continuation of ITAL 001 plus supplementary reading. Offered annually. *Prereq: ITAL001.*

ITAL 003. Intermediate 1 3 sem. hrs.

Grammar review, oral and written practice, and more intensive reading. Offered annually.

Prereq: ITAL 002; or by departmental placement.

ITAL 004. Intermediate 2 3 sem. hrs.

Continuation of ITAL 003. Offered annually.
Prereq: ITAL 003; or by departmental placement.

ITAL 005. Italian Placement Credit

3 or 6 sem. hrs.

A student who places at ITAL 004 and completes ITAL 004 with a grade of B or better will be eligible for three additional credit hours at a grade of S to be designated as ITAL 005. Students exempted from the foreign language requirement will be eligible for six additional credit hours at a grade of S to be designated as ITAL 005 upon completion with a grade of B or better of a third year course to be designated by the department.
 S/U grade assessment.

ITAL 055. Italian Literature 1 3 sem. hrs.

Italian literature from its origin to the end of the 17th century. The course will focus mainly on the Italian great "trecentisti": Dante, Petrarch, and Boccaccio. Offered occasionally. *Prereq: ITAL 004; or by departmental placement.*

ITAL 056. Italian Literature 2 3 sem. hrs.

Continuation of ITAL 055. Italian literature from the 18th century to the present. Main focus on A. Manzoni, G. Verga, L. Pirandello, and I. Silone. Offered occasionally. *Prereq: ITAL 004; or by departmental placement.*

ITAL 082. Composition and Conversation 3 sem. hrs.

Practice in the oral and written use of the Italian language. Offered occasionally. *Prereq: ITAL 004; or by departmental placement.*

ITAL 101. Italian Contributions to Western Civilization 3 sem. hrs.

Readings and lectures in English dealing with the culture and civilization of Italy. Offered occasionally. Knowledge of Italian not required.

▲ITAL 148. Italian Literature in English Translation* 3 sem. hrs.

Readings in English translation of selected masterpieces of Italian literature. Offered occasionally. Knowledge of Italian not required; may not be counted toward fulfillment of the foreign language requirement.

** May be counted as part of the Arts & Sciences literature college curriculum requirement, but not as part of the foreign language requirement.*

Japanese (JAPA)

JAPA 001. Elementary 1 4 sem. hrs.

Introduction to the Japanese language. Fundamentals of comprehension, speaking, reading and writing. Offered annually. No previous study of Japanese; or by departmental placement.

JAPA 002. Elementary 2 4 sem. hrs.

Continuation of JAPA 001. Offered annually.
Prereq: JAPA 001.

JAPA 003. Intermediate 1 3 sem. hrs.

Grammar review, oral and written practice, and more intensive reading. Offered annually.
Prereq: JAPA 002; or by departmental placement.

JAPA 004. Intermediate 2 3 sem. hrs.
Continuation of JAPA 003. Offered annually.
Prereq: JAPA 003; or by departmental placement.

JAPA 005. Japanese Placement Credit
3 sem. hrs.
A student who places at JAPA 004 and completes JAPA 004 with a grade of B or better will be eligible for three additional credit hours at a grade of S to be designated as JAPA 005. Students exempted from the foreign language requirement will be eligible for six additional credit hours at a grade of S to be designated as JAPA 005 upon completion with a grade of B or better of a third year course to be designated by the department.
S/U grade assessment.

JAPA 082. Composition and Conversation 1
3 sem. hrs.
Practice in the oral and written use of the Japanese language. Offered occasionally.
Prereq: JAPA 004; or by departmental placement.

JAPA 101. Japanese Culture and Civilization
3 sem. hrs.
Readings and lectures in English dealing with the culture and civilization of Japan. Offered occasionally.
Knowledge of Japanese not required.

▲ JAPA 148. Japanese Literature in English Translation* 3 sem. hrs.
Readings in English translation of selected masterpieces of Japanese literature. Offered occasionally. Knowledge of Japanese not required. May not be counted toward fulfillment of the foreign language requirement.

JAPA 182. Composition and Conversation 2
3 sem. hrs.
Continuation of JAPA 082. Offered occasionally.
Prereq: JAPA 082; or by departmental placement.

** May be counted as part of the Arts & Sciences literature college curriculum requirement, but not as part of the foreign language requirement.*

Latin (LATI)

LATI 001. Elementary 1 4 sem. hrs.
Classical Latin. Morphology and syntax. Readings. Offered annually. No previous study of Latin; or by departmental placement.

LATI 002. Elementary 2 4 sem. hrs.
Continuation of LATI 001. Offered annually.
Prereq: LATI 001.

LATI 003. Intermediate 1 3 sem. hrs.
Review of morphology and syntax. Extensive reading. Offered annually. *Prereq: LATI 002; or by departmental placement.*

LATI 004. Intermediate 2 3 sem. hrs.
Continuation of LATI 003. Offered annually.
Prereq: LATI 003; or by departmental placement.

LATI 005. Latin Placement Credit
3 or 6 sem. hrs.
A student who places at LATI 004 and completes LATI 004 with a grade of B or better will be eligible for three additional credit hours at a grade of S to be designated as LATI 005.

Students exempted from the foreign language requirement will be eligible for six additional credit hours at a grade of S to be designated as LATI 005 upon completion with a grade of B or better of a third year course to be designated by the department. S/U grade assessment. Credit earned for LATI 005 cannot be used toward the major or minor.

LATI 009. Greek and Latin Origins of Medical and Specialized Terminology
2 sem. 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. Does not fulfill any College Curriculum requirements. Offered occasionally. Knowledge of Latin not required.

▲ LATI 055. Latin Literature 1 3 sem. hrs.
Latin literature from its origin to the end of the Republic. Offered annually. *Prereq: LATI 004; or by departmental placement.*

LATI 056. Latin Literature 2 3 sem. hrs.
Continuation of LATI 055: Latin literature in the Golden and Silver Ages. Offered annually.
Prereq: LATI 004; or by departmental placement.

LATI 105. Cicero: De Senectute and De Amicitia 3 sem. hrs.
Offered occasionally. *Prereq: LATI 055; or LATI 056.*

LATI 108. Greek and Roman Epic Poetry*
3 sem. hrs.
See GREE 108. Offered occasionally. Knowledge of Latin not required; may not be counted toward fulfillment of the foreign language requirement.

LATI 110. Vergil: Aeneid 3 sem. hrs.
Offered occasionally. *Prereq: LATI 055; or LATI 056.*

LATI 112. Horace: Odes 3 sem. hrs.
Offered occasionally. *Prereq: LATI 055; or LATI 056.*

LATI 113. Livy 3 sem. hrs.
Offered occasionally. *Prereq: LATI 055; or LATI 056.*

LATI 118. Classical Foundations of European Literature* 3 sem. hrs.
See GREE 118. Offered occasionally. Knowledge of Latin not required; may not be counted toward fulfillment of the foreign language requirement.

LATI 121. Quintilian: Institutio Oratoria
3 sem. hrs.
Offered occasionally. *Prereq: LATI 055; or LATI 056.*

LATI 133. Roman Letter Writers 3 sem. hrs.
Selections from the letters of Cicero, Seneca, and Pliny. Offered occasionally. *Prereq: LATI 055; or LATI 056.*

LATI 134. Elegiac Poetry 3 sem. hrs.
Offered occasionally. *Prereq: LATI 055; or LATI 056.*

LATI 138. Greek and Roman Literature in English Translation* 3 sem. hrs.
Readings in English translation from Greek and Latin authors. Offered occasionally. Knowledge of Latin not required; may not be counted toward the fulfillment of the foreign language requirement.

LATI 148. Greek and Roman Tragedy*
3 sem. hrs.
See GREE 148. Offered occasionally. Knowledge of Latin not required; may not be counted toward fulfillment of the foreign language requirement.

LATI 150. Roman Comedy: Plautus and Terence 3 sem. hrs.
Offered occasionally. *Prereq: LATI 055; or LATI 056.*

LATI 155. Roman Satire: Juvenal 3 sem. hrs.
Offered occasionally. *Prereq: LATI 055; or LATI 056.*

LATI 158. Greek and Roman Comedy*
3 sem. hrs.
See GREE 158. Offered occasionally. Knowledge of Latin not required; may not be counted toward fulfillment of the foreign language requirement.

LATI 160. Tacitus: Germania and Agricola
3 sem. hrs.
Offered occasionally. *Prereq: LATI 055; or LATI 056.*

LATI 170. Roman Civilization and Art
3 sem. hrs.
Life in ancient Rome. Major achievements of the Romans in the creative arts. Offered occasionally. Knowledge of Latin not required.

LATI 174. Cicero: Political and Philosophical Writings 3 sem. hrs.
Offered occasionally. *Prereq: LATI 055; or LATI 056.*

▲ LATI 175. Mythology* 3 sem. hrs.
See GREE 175. Offered occasionally. Knowledge of Latin not required; may not be counted toward fulfillment of the foreign language requirement.

LATI 178. Greek and Roman Rhetoric*
3 sem. hrs.
See GREE 178. Offered occasionally. Knowledge of Latin not required; may not be counted toward fulfillment of the foreign language requirement.

LATI 182. Composition 3 sem. hrs.
Systematic review of Latin syntax. Exercises in writing Latin prose and analysis of prose of selected authors. Offered occasionally.
Prereq: LATI 055 and LATI 056.

LATI 185. Medieval Latin 3 sem. hrs.
Offered occasionally. *Prereq: LATI 055; or LATI 056.*

LATI 195. Independent Study
1-3 sem. hrs.
Offered every term. *Prereq: cons. of dept. ch.*

LATI 198. Topics in Language or Literature
1-3 sem. hrs.
Subject to be announced. Offered occasionally.
Prereq: Sr. stdng; or cons. of dept. ch.

LATI 199. Senior Thesis 2 sem. hrs.

Introductory thesis guidance for approved students under the direction of a departmental adviser. Offered occasionally. *Prereq: cons. of dept. ch.*

** May be counted as part of the Arts & Sciences literature college curriculum requirement, but not as part of the foreign language requirement.*

Spanish (SPAN)

SPAN 001. Elementary 1** 4 sem. 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 001, must register for SPAN 009. Not open to students with native or near native fluency.

SPAN 002. Elementary 2** 4 sem. hrs.

Continuation of SPAN 001 plus supplementary reading. Offered every term. *Prereq: SPAN001; Not open to students with native or near native fluency.*

SPAN 003. Intermediate Spanish 1**

3 sem. hrs.

Grammar review, oral and written practice, and more intensive reading. Offered every term. *Prereq: SPAN002; or SPAN009; or by departmental placement. Not open to students with native or near native fluency.*

SPAN 004. Intermediate 2** 3 sem. hrs.

Continuation of SPAN 003. Offered every term. *Prereq: SPAN003; Not open to students with native or near native fluency.*

SPAN 005. Spanish Placement Credit

3 or 6 sem. hrs.

A student who places at SPAN 010 and completes SPAN 010 with a grade of B or better will be eligible for three additional credit hours at a grade of S to be designated as SPAN 005. Students exempted from the foreign language requirement will be eligible for six additional credit hours at a grade of S to be designated as SPAN 005 upon completion with a grade of B or better of a third year course to be designated by the department. S/U grade assessment. Credit earned for SPAN005 cannot be used toward the major or minor.

SPAN 009. Intensive Elementary Spanish

4 sem. 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. Offered every semester.

Prereq: Two or more years of high school Spanish and departmental placement. Not open to students with native or near native fluency.

SPAN 010. Concentrated Intermediate**Spanish**** 4 sem. 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. Offered every term. *Prereq: SPAN002 with minimum grade of AB; or SPAN009 with minimum grade of AB; or by departmental placement. Not open to students with native or near native fluency.*

SPAN 082. Composition and**Conversation 1**** 3 sem. hrs.

Practice in the oral and written use of the Spanish language. Offered every term. *Prereq: SPAN 004; or SPAN 010; or by departmental placement. Not open to students with native or near native fluency.*

▲SPAN 090. Introduction to Hispanic**Literature** 3 sem. hrs.

Basic literary concepts and analysis of the four genres, with intensive practice in reading and oral comprehension. Offered annually. *Prereq: SPAN 082; or cons. of dept. ch.; Not open to students with native or near native fluency.*

SPAN 100. Spanish Civilization 3 sem. hrs.

Historical development of the culture and civilization of Spain from early times to the present. Duplicate credit will not be given for SPAN 100 and SPAN 101. Offered annually. *Prereq: SPAN 082; or cons. of dept. ch.*

SPAN 101. Hispanic Contributions to**Western Civilization** 3 sem. hrs.

Readings in English translation dealing with the culture and civilization of Spain and Spanish America. Duplicate credit will not be given for SPAN 100 and SPAN 101, or for SPAN 102 and SPAN 101. May not be counted toward fulfillment of academic or teaching major or minor. Offered occasionally. Knowledge of Spanish not required.

SPAN 102. Spanish American Civilization

3 sem. hrs.

Historical development of the culture and civilization of Spanish America from early times to the present. Duplicate credit will not be given for SPAN 101 and SPAN 102. Offered annually. *Prereq: SPAN 082; or cons. of dept. ch.*

▲SPAN 103. Contemporary Issues in the**Hispanic World** 3 sem. hrs.

Lecture and discussion in Spanish at an advanced level of current Hispanic topics and issues pertaining to such areas as culture, business, education, politics and history. Offered annually. *Prereq: SPAN 100; or SPAN 102.*

▲SPAN 105. Spanish Literature 1 3 sem. hrs.

Spanish literature from its origin to the end of the 17th century. Offered annually. *Prereq: SPAN 090; or cons. of dept. ch.; Not open to students with native or near native fluency.*

▲SPAN 106. Spanish Literature 2 3 sem. hrs.

Spanish literature from the 18th century to the present. Offered annually. *Prereq: SPAN 090; or cons. of dept. ch.; Not open to students with native or near native fluency.*

▲SPAN 125. Golden Age Drama and Poetry

3 sem. hrs.

Selected readings in Spanish drama and poetry of the sixteenth and seventeenth centuries. Offered occasionally. *Prereq: SPAN 105; or SPAN 184; or cons. of dept. ch.*

SPAN 126. Modern Spanish Drama

3 sem. hrs.

Significant Spanish drama of the 19th and 20th centuries. Offered occasionally. *Prereq: SPAN 106; or SPAN 184; or cons. of dept. ch.*

SPAN 135. Practicum in Hispanic Theatre

2 sem. hrs.

Development of language skills through participation in Hispanic dramatic productions. Subject to be announced. Offered occasionally. May be repeated for credit with cons. of dept. ch. *Prereq: SPAN 004; or SPAN 010; or cons. of dept. ch.; Does not count toward major or minor in Spanish; S/U grade assessment.*

SPAN 142. Phonetics 3 sem. hrs.

Articulation of individual sounds and sound groupings, and patterns of tone and stress in the Spanish of Spain and Spanish America. Offered annually. *Prereq: SPAN 082; or cons. of dept. ch.*

SPAN 148. Spanish Literature in English**Translation*** 3 sem. hrs.

Major literary developments in Spanish literature with emphasis on outstanding literary works and figures. Knowledge of Spanish not required. May not be counted toward fulfillment of academic or teaching major or minor; or as part of the foreign language requirement. Offered occasionally.

SPAN 150. Twentieth Century Literature

3 sem. hrs.

Non-dramatic literature of the Generation of 1898 and subsequent literary developments in contemporary Spain. Offered occasionally. *Prereq: SPAN 106; or SPAN 184; or cons. of dept. ch.*

SPAN 152. Introduction to Spanish for International Business** 3 sem. hrs.

An overview to Spanish terminology and international business practices in the Hispanic world. *Prereq: SPAN 082; or cons. of dept. ch.; Not open to students with native or near native fluency.*

SPAN 153. Advanced Spanish for International Business: Commercial Spanish and Contracts 3 sem. hrs.

An advanced course in commercial Spanish to train students to deal successfully at all levels in the Hispanic business world. Offered annually. *Prereq: SPAN 152; for non-native speakers.*

SPAN 154. Introduction to Spanish for the Health Professions 3 sem. 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. Offered annually. Not open to students with native or near-native fluency. *Prereq: SPAN 082; or cons. of dept. ch.*

SPAN 155. Advanced Spanish for the Health Professions 3 sem. 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. Offered annually. *Prereq: SPAN 154; or cons. of dept. ch.*

SPAN 158. Spanish American Literature in English Translation* 3 sem. hrs.

Major literary developments in Spanish-American literature with emphasis on outstanding literary works and figures. Offered occasionally. Knowledge of Spanish not required; does not count toward Spanish major or minor or as part of the foreign language requirement.

SPAN 170. Spanish-American Novel 3 sem. hrs.

Evolution of the Spanish-American novel, with emphasis on significant fiction of the 20th century. Offered occasionally. *Prereq: SPAN 106 and SPAN 193; or SPAN 106 and SPAN 194; or SPAN 184 and SPAN 193; or SPAN 184 and SPAN 194; or cons. of dept. ch.*

▲SPAN 175. Golden Age Prose 3 sem. hrs.
Selected reading from Don Quixote and other significant prose works of the Golden Age. Offered occasionally. *Prereq: SPAN 105; or SPAN 184; or cons. of dept. ch.*

SPAN 182. Composition and Conversation 2** 3 sem. hrs.

Advanced practice in the oral and written use of the Spanish language. Offered every term. *Prereq: SPAN 082; or by departmental placement. Not open to students with native or near native fluency.*

SPAN 183. Spanish for the Bilingual Student 3 sem. hrs.

Acquaints bilingual students with Spanish specifically in its written form by focusing on reading and lexical development, grammar review, orthographic practice and composition. Offered fall term.

SPAN 184. Literature for the Bilingual Student 3 sem. hrs.

Acquaints native and/or bilingual Spanish speaking students with the principal literary movements and representative authors in the Hispanic world. Offered spring term.

SPAN 185. Advanced Grammar 3 sem. hrs.
Grammatical structure of the Spanish language in context with other linguistic areas. Offered annually. *Prereq: SPAN 082; or cons. of dept. ch.*

SPAN 190. Spanish Literature Prior to the Golden Age 3 sem. hrs.

Significant literary texts from the Middle Ages to the 16th century. Offered occasionally. *Prereq: SPAN 105; or SPAN 184; or cons. of dept. ch.*

▲SPAN 192. Spanish Literature of the Eighteenth and Nineteenth Centuries 3 sem. hrs.

The major figures of the Neoclassic, Romantic, Realist and Naturalist movements in Spain. Offered occasionally. *Prereq: SPAN 106; or SPAN 184; or cons. of dept. ch.*

▲SPAN 193. Spanish-American Literature 1 3 sem. hrs.

Principal writers and trends of the Pre-Columbian period up to Modernismo. Offered annually. *Prereq: SPAN 105; or SPAN 184; or cons. of dept. ch.*

SPAN 194. Spanish-American Literature 2 3 sem. hrs.

Continuation of SPAN 193. Literary developments from Modernismo to the present. Offered annually. *Prereq: SPAN 106; or SPAN 184; or cons. of dept. ch.*

SPAN 195. Independent Study 1-3 sem. hrs.

Offered every term. *Prereq: cons. of dept. ch.*

SPAN 198. Topics in Language and Literature 1-3 sem. hrs.

Subject to be announced. Offered occasionally. *Prereq: Sr. stndg; or cons. of dept. ch.*

SPAN 199. Senior Thesis 2 sem. hrs.

Introductory thesis guidance for approved students under the direction of a departmental adviser. Offered occasionally. *Prereq: cons. of dept. ch.*

* *May be counted as part of the Arts & Sciences literature college curriculum requirement, but not as part of the foreign language requirement.*

** *SPAN 001, 002, 003, 004, 010, 050, 055, 056, 082, 152, 182 not open for credit to native speakers of Spanish except by consent of department chairperson.*

HISTORY (HIST)

Chairperson and Associate Professor: Grahm Professor: Bicha (Emeritus), Donnelly, Gardinier (Emeritus), Marten, Phayer (Emeritus), Prucha (Emeritus), Ruff, Theoharis, Weber (Emeritus), Zupko (Emeritus),
Associate Professor: Avella, Ball, C. Hay, Jablonsky, Krugler, Naylor, Zeps
Assistant Professor: Creary, Knox, Meissner
Visiting Assistant Professor: Donson, K. Foster, Fox, McMahon, Singer
Adjunct Professor: Morrison
Adjunct Assistant Professor: Brazeau
Instructor: Hauser

MAJOR:

HIST 001, 002, 006, and one of the following: 071, 077, or 082; or HIST 001, 002, 004, and 005; plus 18 hours of upper division history, which must include at least one course from each of the three groups listed below.

Group I United States Courses 101–129

Group II Europe Courses 130–170

Group III Asia, Africa and Latin America Courses 171–184

The 18 hours selected must also include one course from either HIST 196 or 197. HIST 196 or 197 may be used to satisfy the group distribution requirement based on course content.

MINOR:

HIST 001, 002, 006, and one of the following: 071, 077, or 082; or HIST 001, 002, 004, and 005; plus nine hours of upper division history.

TEACHING MAJOR:

Thirty-six hours including HIST 001, 002, 006, and one of the following: 071, 077, or 082; or

HIST 001, 002, 004, and 005; plus 24 hours of upper division history. The 24 hours must include at least one course from each of the three groups listed above, both an ancient/medieval (courses 130–138) and a modern (courses 139–170) course in Group II, and one course from either HIST 196 or 197. HIST 196 and 197 may be used to satisfy the group distribution requirement based on course content.

Students should see the department adviser for middle school/secondary teaching majors or minors to consult about the appropriate sequence of courses. It is also important that prospective teachers study carefully the School of Education section of this bulletin regarding university and state requirements (in addition to department requirements) for teacher education.

Please refer to "Core Curriculum requirements for Education Majors" under "Graduation Requirements" in the College of Arts and Sciences section of this bulletin.

TEACHING MINOR:

Twenty-four hours, including HIST 001, 002, 006, and one of the following: 071, 077, or 082; or HIST 001, 002, 004, and 005; plus 12 hours of upper division history. The upper division courses must include at least one course from each of the three groups listed above. One of the upper division courses must be either HIST 196 or 197.

Note: HIST 195, 196, 197, and 198, courses whose content varies from term to term, will satisfy group distribution requirements according to their course title and content.

Note: At the discretion of the department, credit in history may be allowed in exceptional cases for courses taken in other departments of the university.

AMERICAN MILITARY HISTORY (AMMH)

Thirty-two to thirty-six hours, including HIST 001 and 002 (6 credit hours); HIST 004 and 005, or HIST 006 (3-6 credit hours); AFAS 021 and 022, or NASC 022 (2-3 credit hours); HIST 118 (3 credit hours); NASC 161 or 181 (3 credit hours); and any 5 of the following: HIST 102, 104, 113, 114, 127, 165, 166, and 170 (15 credit hours). HIST 195, 196, 197, and 198 may be used toward the upper-division HIST elective requirement, depending upon course content and approval of the department chair. A HIST or THIS (Teaching Major in History) cannot be used as a second major with American Military History (AMMH).

▲HIST 001. Growth of Western Civilization 1 3 sem. hrs.

An interpretation of the evolution of Western society beginning with the ancient Near Eastern experience. Second term begins 1715. Offered every term.

▲HIST 002. Growth of Western Civilization 2 3 sem. hrs.

An interpretation of the evolution of Western society beginning with the ancient Near Eastern experience. Second term begins 1715. Offered every term.

HIST 004. Growth of the American Nation 1
3 sem. hrs.

The United States from colonial origins to the present, with consideration of political, cultural, and economic institutions and ideas. Second term begins with Reconstruction.

HIST 005. Growth of the American Nation 2
3 sem. hrs.

The United States from colonial origins to the present, with consideration of political, cultural, and economic institutions and ideas. Second term begins with Reconstruction.

▲HIST 006. Introduction to American History 3 sem. hrs.

A survey of American history from the colonial origins to the present.

HIST 007. History of Western Art 1 3 sem. 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. Offered annually. Does not count toward history major or minor.

HIST 008. History of Western Art 2
3 sem. 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. Offered annually. Does not count toward history major or minor.

▲HIST 071. Latin America 3 sem. 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. Offered annually. Dual application course.

▲HIST 077. Africa 3 sem. 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. Offered every semester.

▲HIST 082. East Asia 3 sem. 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. Offered every semester.

GROUP I UNITED STATES**HIST 101. The British American Colonies to 1763** 3 sem. hrs.

The founding of the mainland colonies, the growth of political and social institutions, the development of religious freedom, the Indian wars, and the rise of African slavery to 1763. *Prereq: Soph. stndg.*

HIST 102. The American Revolution and the New Nation 3 sem. hrs.

The development of an American nationality in the 18th century, the causes and consequences of the American Revolution, the Loyalist response, the Constitution and the establishment of the new government to 1800. *Prereq: Soph. stndg.*

HIST 103. Jeffersonian and Jacksonian Democracy 3 sem. hrs.

United States history, 1800 to 1836, emphasizing democratic movements and the emergence of nationalism. *Prereq: Soph. stndg.*

HIST 104. The Civil War Era 3 sem. 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. stndg.*

HIST 106. Gilded Age to the Progressive Era, 1876-1920 3 sem. 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. stndg.*

HIST 107. United States in the Twentieth Century 1 3 sem. 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 108. United States in the Twentieth Century 2 3 sem. 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 109. The Westward Movement
3 sem. 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 111. Social and Intellectual History of the United States 1 3 sem. hrs.

American thought and society from Puritan New England to recent times, emphasizing the principal idea patterns that have given character to American society. *Prereq: Soph. stndg.*

HIST 112. Social and Intellectual History of the United States 2 3 sem. hrs.

American thought and society from Puritan New England to recent times, emphasizing the principal idea patterns that have given character to American society. Begins 1865. *Prereq: Soph. stndg.*

HIST 113. American Foreign Relations 1
3 sem. 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 114. American Foreign Relations 2
3 sem. 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 115. Religion and American Life 1
3 sem. 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 116. Religion and American Life 2
3 sem. hrs.

Survey the historical impact of religious belief and institutions on the intellectual, cultural, and public life of the United States. Considers this theme through the challenges of the latter nineteenth century and the twentieth century. *Prereq: Soph. stndg.*

HIST 118. American Military History
3 sem. 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 119. Constitutional History of the United States 3 sem. 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 120. African American History
3 sem. hrs.

The role and response of the African-American in American society. Emphasis on the problems of slavery, exclusion, accommodation, migration, urbanization, and currents of protest. *Prereq: Soph. stndg.*

HIST 121. American Urban History
3 sem. 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 123. Childhood in America 3 sem. 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 125. History of Rock and Roll
3 sem. 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 127. The Vietnam War Era 3 sem. 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.*

GROUP II EUROPE

HIST 131. Ancient Greece and Rome
3 sem. 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 001 and HIST 002 recommended.*

HIST 134. The Crusades 3 sem. hrs.
Western European and Middle Eastern relations from the 11th through the 13th centuries; includes Arabic, Byzantine, Turkish, and Mongol areas. *Prereq: Soph. stndg; and HIST 001, 002 recommended*

HIST 135. Economic and Social History of the Middle Ages 3 sem. hrs.

The social, technological, industrial, and commercial growth of Europe in the Middle Ages, emphasizing the rise of towns, the shifting demographic patterns, and the Commercial Revolution. *Prereq: Soph. stndg; HIST 001 and HIST 002 recommended.*

HIST 136. Medieval England 3 sem. hrs.
A social, political, and military history of England from the Roman Empire to the rise of the Tudor Dynasty. *Prereq: Soph. stndg; HIST 001 and HIST 002 recommended.*

HIST 137. The Renaissance 3 sem. 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 001 and HIST 002 recommended.*

HIST 138. History of the Catholic Church 1, 100-1500 3 sem. hrs.

This course gives equal stress to the Church as an institution, the development of doctrine, and popular religion. It traces Catholicism from the Roman Period to the Renaissance. *Prereq: HIST 001 and HIST 002.*

HIST 139. History of the Catholic Church 2, 1500-Present 3 sem. hrs.

This course examines the effect of the Protestant and Catholic Reformations on Christianity in the West, the impact of Absolutism, and the challenges of modernity from the Enlightenment through Vatican II. *Prereq: HIST 001 and HIST 002.*

HIST 140. The Age of the Reformation, 1500 to 1648 3 sem. 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 001 and HIST 002 recommended*

HIST 141. Pre-Revolutionary Europe, 1648 to 1789 3 sem. 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 001 and HIST 002 recommended.*

HIST 142. The French Revolution and Napoleon, 1787 to 1815 3 sem. 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 001 and HIST 002 recommended.*

HIST 143. Reaction, Revolution, and Nationalism, 1814 to 1914 3 sem. 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 001 and HIST 002 recommended.*

HIST 145. Twentieth Century Europe
3 sem. 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 001 and HIST 002 recommended.*

HIST 149. Intellectual History of Modern Europe 1 3 sem. hrs.

European intellectual and religious developments since 1550. The scientific revolution, the Age of Genius, the Enlightenment. *Prereq: Soph. stndg; HIST 001 and HIST 002 recommended.*

HIST 150. Intellectual History of Modern Europe 2 3 sem. hrs.

European intellectual and religious developments since 1550. Romanticism, liberalism, nationalism, the Catholic revival and Marxian materialism. *Prereq: Soph. stndg; HIST 001 and HIST 002 recommended.*

HIST 151. History and Philosophy of Crime and Punishment 3 sem. 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 050; Same as PHIL 151 and CRLS 151. May be counted toward the core curriculum requirement in either Philosophy or Social-behavioral Science.*

HIST 152. Women in Western Civilization
3 sem. hrs.

Survey of women's experiences in western civilization from prehistory to the present. Focusing primarily on Europe and the United States, the course analyzes the changing roles

and responsibilities of women in the family, in the work force, and in the community. Also, the impact of such phenomena as religion, science, technology, and democracy on the shifting perceptions and definitions of gender in western civilization. *Prereq: Soph. stndg; HIST 001 and HIST 002 recommended.*

HIST 154. Tudor England 1485 to 1603
3 sem. 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 155. Great Britain, 1714-1867
3 sem. 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 001 and HIST 002 recommended.*

HIST 156. Great Britain Since 1815
3 sem. hrs.

This course focuses on the democratization of Britain, the creation of the welfare state, and 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 001 and HIST 002 recommended.*

HIST 157. Constitutional and Legal History of England 3 sem. hrs.

Constitutional and legal developments from the Anglo-Saxon period to the present, emphasizing the evolution of parliamentary democracy and the Common Law system. *Prereq: Soph. stndg; HIST 001 and HIST 002 recommended.*

HIST 158. The British Empire 3 sem. 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 001 and HIST 002 recommended.*

HIST 160. Ireland Since 1780 3 sem. 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 001 and HIST 002 recommended.*

HIST 162. France Since 1815 3 sem. hrs.
France from the fall of Napoleon into the 20th century, emphasizing the internal developments, with some attention to foreign affairs. *Prereq: Soph. stndg; HIST 001 and HIST 002 recommended.*

HIST 163. Germany, 1648-1870 3 sem. hrs.
German-speaking Europe with emphasis on the great personalities, including Frederick the Great, Maria Theresa, Metternich, and Bismark; the major social themes, including life in rural Germany and in German hometowns; and the

principal movements, including the revolution of 1848 and German unification after the Franco-Prussian war. *Prereq: Soph. stndg; HIST 001 and HIST 002 recommended.*

HIST 164. Germany Since 1870 3 sem. hrs.
The political, social, and intellectual development of Germany under the Empire, in the Weimar Republic, the Third Reich, and the post war period. Special attention is given to the Nazi era, including the personality and motivation of Adolf Hitler. *Prereq: Soph. stndg; HIST 001 and HIST 002 recommended.*

HIST 165. "The Great War": World War I, 1914-18 3 sem. 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 001 and HIST 002 recommended.*

HIST 166. World War II 3 sem. 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 001 and HIST 002 recommended.*

HIST 167. Russia to 1861 3 sem. 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 001 and HIST 002 recommended.*

HIST 168. The Russian Revolution and the Soviet Union 3 sem. 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 001 and HIST 002 recommended.*

HIST 170. The Cold War 3 sem. 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. and HIST 001 and HIST 002.*

GROUP III ASIA, AFRICA AND LATIN AMERICA

HIST 173. The Caribbean 3 sem. 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 001 and HIST 002 recommended.*

HIST 174. History of Mexico 3 sem. 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 001 and HIST 002 recommended.*

HIST 179. North Africa 3 sem. hrs.

North Africa from the 7th century to the present, emphasizing Islamic and European influences. *Prereq: Soph. stndg; HIST 001 and HIST 002 recommended.*

HIST 180. Elective: Third World

0-6 sem. hrs.

HIST 181. Modern Middle East Since 1500 3 sem. 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 001 and HIST 002 recommended.*

HIST 183. Japan and the Four Dragons

3 sem. hrs.

Examination of the modern histories of Japan, Singapore, Hong Kong, Taiwan and South Korea, with emphasis on the unique cultural factors, government policies, and historical circumstances which contributed to their dynamic economic development. Offered biennially. *Prereq: Soph. stndg.*

HIST 184. Modern China 3 sem. hrs.

The history of China from 1800-1976, emphasizing national responses to imperial decline, western intervention, civil wars, foreign occupation and political turmoil. Offered biennially. *Prereq: Soph. stndg.*

HIST 192. Public History 3 sem. 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. and HIST 004 and HIST 005*

HIST 193. Internship in Public and Applied History 3 sem. hrs.

Practical experience related to history, museum, or archival studies involving work in an approved agency. Projects of a substantive nature are to be arranged by the student with the historical agency. Projects not involving remuneration should entail approximately 8-10 hours per week for undergraduates and 10-15 hours per week for graduate students at the agency. Other projects will include a substantive paper along with the work experience. Although performance in this course is assessed using S and U grades, the course counts toward the undergraduate major or minor. *Prereq: Jr. stndg. and Consent Required; Consent of Assistant Chair required. History 210 required for graduate students. S/U grade assessment.*

HIST 195. Independent Study

1-3 sem. hrs.

Offered annually. *Prereq: Jr. stndg. and cons. of instr. and cons. of dept. ch.*

HIST 196. Undergraduate Seminar

3 sem. hrs.

Designed to initiate a small group of undergraduates in the techniques of scholarly historical study by concentrated work in a specialized field. *Prereq: Jr. stndg.*

HIST 197. Undergraduate Colloquium in History 3 sem. 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 to be treated in 197 courses will be designated in the *Timetable of Classes*. Offered annually. *Prereq: Jr. stndg.*

HIST 198. Special Topics in History

3 sem. hrs.

A lecture course on special areas and themes. The specific topics of 198 courses will be designated in the *Timetable of Classes*. Offered occasionally. *Prereq: Soph. stndg.*

HIST 199. Senior Thesis 3 sem. hrs.

Offered annually. *Prereq: 3.5 MU QPA and consent required; consent of dept. assistant chair.*

MATHEMATICS, STATISTICS AND COMPUTER SCIENCE (MATH AND COSC)

Chairperson and Professor: P. Jones

Assistant Chairperson and Associate

Professor: Ruitenburt

Professor: Bankston, Bansal, Braunschweiger

(Emeritus), Clough, Hamedani, Hanneken

(Emeritus), Harris, Krenz, Lamon, Lawrence

(Emeritus), Merrill, Moyer, Pastijn, Ziegler

(Emeritus)

Associate Professor: Brookshear, Byleen, Liu,

Simms, Slattery

Assistant Professor: Ahamed, Bajorunaite,

J. Factor, K. Factor, Struble

Adjunct Assistant Professor: Shaw

Research Associate Professor: Tonellato

Adjunct Instructor: Manyo, Schwerm, Utzerath, Zheng

Lecturer: Freeman, Pflughoeft, Reddy

Instructor: Boelk, Cmielinski, Dabrowski,

Laughlin, Pakkala, Ranganath, Walker,

Weidner, Zrotowski

MATHEMATICS MAJOR:

Thirty-nine hours of mathematics courses, including MATH 080, 081, 082, 090, 121 and at least twenty-one additional hours of upper division MATH courses including at least three of the following: MATH 112, 124, 135, 140, 160, and 180. In addition, each student must complete at least one computer science course offered by the department.

COMPUTER SCIENCE MAJOR:

Thirty-eight hours of computer science courses, including COSC 060, 061, 065, 066, 125, 126, 152 and fifteen additional hours of upper-division COSC courses. In addition, each student must complete MATH 071, 090, 147, and three additional hours of upper-division MATH courses.

COMPUTER SCIENCE MINOR:

Twenty hours of computer science courses, including COSC 060, 061, 065, 066 and six additional hours of upper-division COSC courses. In addition, each student must complete MATH 090.

SOFTWARE DEVELOPMENT MINOR:

Twenty hours of computer science courses, including COSC 060, 061, 066 162 and six additional hours of upper-division COSC courses. In addition, each student must complete MATH 090.

COMPUTATIONAL MATHEMATICS MAJOR:

Fifty hours of mathematics and computer science courses, including MATH 080, 081, 082, 090, 121, 147, either 161 or 164; COSC 060, 061, 065, 066, 146; two of MATH 140, 142, 160, 166, 167, 180; and one of COSC 125, 152.

TEACHING MAJOR IN MATHEMATICS:

Thirty-nine hours of mathematics courses, including MATH 080, 081, 082, 090, 121, 124, 135, 138, 160, either 161 or 164, and six additional hours of upper division MATH courses. In addition to these thirty-nine hours, each student must complete at least one computer science course offered by the department and MATH 137 (Teaching of Mathematics), which is required as part of the state certification program. MATH 137 and a computer science course must be completed before student teaching.

From the beginning of their work toward a degree students should consult with both the department adviser for middle school/secondary teaching majors and the Director of Teacher Education in the School of Education about the appropriate sequence of courses. University and state requirements for teacher certification are described in the School of Education section of this bulletin.

Please refer to "Core Curriculum requirements for Education Majors" under "Graduation Requirements" in the College of Arts and Sciences section of this bulletin.

TEACHING MINOR IN MATHEMATICS:

Twenty-six hours of mathematics courses consisting of MATH 080, 081, 090, 121, 124, 135, 138, and 164. In addition to these twenty-six hours, MATH 137 (Teaching of Mathematics) is required as part of the state certification program. MATH 137 must be completed before student teaching. From the beginning of their work toward a degree students should consult with both the department adviser for middle school/secondary teaching majors and the Director of Teacher Education in the School of Education about the appropriate sequence of courses. University and state requirements for teacher certification are described in the School of Education section of this bulletin.

TEACHING MINOR IN COMPUTER SCIENCE:

Twenty hours of computer science courses, including COSC 060, 061, 065, 066 and six additional hours of upper-division COSC

courses. In addition, each student must complete MATH 090.

From the beginning of their work toward a degree students should consult with both the department adviser for middle school/secondary teaching majors and the Director of Teacher Education in the School of Education about the appropriate sequence of courses. University and state requirements for teacher certification are described in the School of Education section of this bulletin.

Mathematics Courses (MATH)**MATH 010. Intermediate Algebra** 2 sem. 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. Offered occasionally. *Prereq: cons. of dept. ch.*

MATH 020. College Algebra 3 sem. 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 021. Trigonometry and Analytic Geometry 3 sem. hrs.

A continuation of MATH 020 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. Offered spring term. *Prereq: MATH 020 or equivalent. Equivalent is one year of high school geometry and the equivalent of MATH 020 in high school courses. Does not count toward the Math-Logic-Computer requirement in the Arts and Sciences College Curriculum.*

▲MATH 025. The Nature of Mathematics 3 sem. 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. Offered occasionally. *Prereq: Two years of college preparatory mathematics.*

MATH 026. Applications of Mathematics 3 sem. hrs.

Application of mathematics presented via case studies. Examples drawn from such areas as biology, engineering, and social sciences. Emphasis on the contributions of mathematics rather than computational skills. Offered occasionally. *Prereq: Two years of college preparatory mathematics.*

MATH 030. Early Arithmetic 3 sem. hrs.

Prepares students to teach early elementary grades. Uses a problem solving approach. Integrates mathematics and science topics; content and methods; arithmetic, algebra, and geometry; classroom and field work. Includes NCTM Standards, Constructivism, inductive and deductive reasoning, sets, sequences, numeration systems, the CGI method of teaching addition and subtraction, number theory, measurement, topology, LOGO, and various manipulatives. Restricted to students in the elementary and middle school teacher preparation programs. Field experience is required. *Prereq: EDUC 110 which must be taken concurrently and cons. of dept. ch.; Two years of college preparatory mathematics.*

MATH 031. Elementary School Mathematics 3 sem. hrs.

Prepares students to teach mathematics in the elementary grades. Uses a problem solving approach. Integrates mathematics and science topics; content and methods; arithmetic, algebra, and geometry; classroom and field work. Includes whole numbers, exponents, fractions, ratios, percent, transformational geometry, spreadsheet, Geometric Supposers, and various fraction manipulatives. Restricted to students in the elementary and middle school teacher preparation programs. Field experience is required. *Prereq: EDUC 120 which must be taken concurrently and MATH 030.*

MATH 032. Pre-Algebra and Geometry 3 sem. hrs.

Prepares students to teach mathematics in the upper elementary and middle school grades. Uses a problem solving approach. Integrates content and methods; arithmetic, algebra, and geometry; classroom and field work. Includes probability and statistics, integers, rational and irrational numbers, relations and functions, equations and inequalities, conjectures and deductions in geometry, algebra lab gear and other manipulatives. Restricted to students in the elementary and middle school teacher preparation programs. Field experience required. *Prereq: MATH 031; Must be taken concurrently with EDUC 128.*

▲MATH 060. Modern Elementary Statistics 3 sem. 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. Offered every term. *Prereq: MATH 010 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 070. Finite Mathematics 3 sem. 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. Offered every term.

Prereq: MATH 020 or equivalent. Equivalent is three years of college preparatory mathematics.

MATH 071. Elements of Calculus 1

3 sem. 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. Offered every term. *Prereq: MATH 020 or equivalent. Equivalent is three years of college preparatory mathematics.*

MATH 072. Elements of Calculus 2

3 sem. hrs.

Partial derivatives, multiple integration, differential equations, infinite series, numerical techniques. Applications and examples chosen primarily from business, economics, and the social and behavioral sciences. Offered occasionally. *Prereq: MATH 071.*

MATH 073. Calculus for the Biological Sciences 3 sem. hrs.

Fundamental concepts and techniques of differential and integral calculus, logarithmic, exponential and trigonometric functions, examples and applications from biology and medicine. Offered every term. *Prereq: MATH 020 or equivalent. Equivalent is three years of college preparatory mathematics.*

▲MATH 080. Calculus 1 4 sem. hrs.

Functions of one variable, limits and continuity. The derivative and the definite integral with applications. Offered every term. *Prereq: MATH 021 or equivalent. Equivalent is three to four years of college preparatory mathematics including topics listed in description of MATH 021.*

▲MATH 081. Calculus 2 4 sem. hrs.

The transcendental functions. Techniques of integration including numerical methods. Elementary differential equations. Infinite sequences and series, Taylor Series. Offered every term. *Prereq: MATH 080.*

MATH 082. Calculus 3 4 sem. hrs.

Three-dimensional analytic geometry including parametric equations, vectors and vector functions. The differential and integral calculus of functions of several variables. Offered every term. *Prereq: MATH 081.*

MATH 083. Differential Equations 4 sem. hrs.

Methods and techniques applicable to first order, n th order, and systems of first order differential equations. Eigenvalues, eigenvectors, the Wronskian, Laplace transforms, linearization, and phase portraits. Offered every term. *Prereq: MATH 082.*

MATH 086. Calculus 3 for Biomedical Engineers 3 sem. hrs.

Three-dimensional analytic geometry. The differential and integral calculus of functions of several variables, with applications to biomedical engineering. Offered fall term. *Prereq: MATH 081.*

MATH 087. Differential Equations for Biomedical Engineers 3 sem. hrs.

Methods and techniques for solving differential equations and systems of differential equations, with applications to biomedical engineering. Offered spring term. *Prereq: MATH 082; or MATH 086.*

MATH 090. Discrete Mathematics

3 sem. hrs.

Introduction to abstract mathematics through the window of discrete mathematics. Algebraic systems. Sequences and generating functions. Sets and relations, including equivalences, congruences, and orderings. Elementary graph theory. Offered every term. *Prereq: MATH 081; Credit will not be given for both MATH 090 and MATH 145.*

MATH 099. Modern Logic 3 sem. hrs.

An introduction to deductive reasoning, which underlies philosophical, mathematical, scientific, legal, and everyday discourse. The precise formulation and sound construction of valid arguments in propositional and first-order logic. Logical connectives, quantifiers, proofs, theorems, and theories. Applications of symbolic logic to axiomatic systems. Offered spring term. This course is equivalent to PHIL 099, and counts toward the philosophy major and the College Curriculum logic requirement.

MATH 100. Problem Solving—Putnam Competition 1 sem. 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. *Prereq: cons. of instr.; S/U grade assessment*

MATH 101. History of Mathematical Ideas 3 sem. 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. Offered alternate spring terms. *Prereq: Jr. stndg; or cons. of dept. ch.*

MATH 112. Topology 3 sem. hrs.

Topological spaces, mappings, metric spaces, product and quotient spaces. Separation axioms, compactness, local compactness and connectedness. Offered occasionally. *Prereq: MATH 090.*

MATH 120. Theory of Numbers 3 sem. hrs.

Integers, unique factorization theorems, arithmetic functions, theory of congruences, quadratic residues, partition theory. Offered spring term. *Prereq: MATH 090.*

MATH 121. Linear Algebra and Matrix Theory 3 sem. hrs.

N -dimensional vector spaces, bases and coordinate systems, linear transformations and matrices, systems of equations, characteristic values, applications to differential equations and geometry. Offered every term. *Prereq: MATH 083; or MATH 090; Does not carry graduate credit for MSCS graduate students.*

MATH 124. Abstract Algebra 1 3 sem. 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. Offered fall term. *Prereq: MATH 090.*

MATH 125. Abstract Algebra 2 3 sem. hrs.

A continuation of MATH 124 with emphasis on groups, rings, fields, and modules. Offered occasionally. *Prereq: MATH 124.*

MATH 135. Foundations of Geometry

3 sem. hrs.

Modern postulational development of Euclidean and non-Euclidean geometries. Offered fall term. *Prereq: MATH 090.*

MATH 136. Geometric Transformations

3 sem. hrs.

Overview of transformation geometry including a study of congruence, similarity, affine, projective and topological transformation groups. Offered occasionally. *Prereq: MATH 090.*

MATH 137. The Teaching of Mathematics

3 sem. 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. Offered alternate fall terms. *Prereq: EDUC 079 and MATH 124 which may be taken concurrently and MATH 135 which may be taken concurrently; Admission to the School of Education required.*

MATH 138. Topics in Elementary Mathematics from an Advanced Standpoint 3 sem. hrs.

Standpoint 3 sem. hrs. Topics closely related to the secondary mathematics program taught to deepen the student's understanding of these topics. Topics selected from such areas as set theory, number theory, elementary functions, theory of equations, and transformation geometry. Offered alternate spring terms. *Prereq: MATH 124 and MATH 135 and Consent Required; Consent of Department's Coordinator of Teacher Education.*

MATH 140. Theory of Differential Equations

3 sem. hrs.

Existence and uniqueness theorems, linear and non-linear systems, numerical techniques, stability. Offered spring term. *Prereq: MATH 083; or MATH 121.*

MATH 142. Elementary Partial Differential Equations 3 sem. hrs.

Fourier series, method of separation of variables, eigenfunction expansions, application of eigenfunctions to partial differential equations, Green's functions and transform methods. Offered occasionally. *Prereq: MATH 083.*

MATH 144. Operational Methods in Physics and Engineering 3 sem. hrs.

Functions of a complex variable. Laplace and Fourier transforms and applications. Introduction to the calculus of variations. Offered occasionally. *Prereq: MATH 082; Does not carry graduate credit for students in any of the master's degree programs of the Department of Mathematics, Statistics and Computer Science.*

MATH 145. Discrete Mathematics for Engineers 3 sem. hrs.

Counting methods. The algebra of sequences, generating functions, and recurrences. The algebra of finite state machines and semi-groups. Relations, graphs, posets, and trees. Path and flow problems. Offered occasionally. *Prereq: MATH 083; Credit will not be given for both MATH 090 and MATH 145.*

MATH 146. Numerical Analysis 3 sem. 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. Offered fall term. *Prereq: COSC 051 and MATH 081; or GEEN 021 and MATH 081; or GEEN 051 and MATH 081; Credit will not be given for both MATH 146 and COSC 146.*

MATH 147. Computational Models 3 sem. hrs.

Construction and analysis of mathematical models from biological, behavioral and physical sciences. Methodology of model building and problem solving. Offered every term. *Prereq: COSC 051 and MATH 090.*

MATH 150. Applied Combinatorial Mathematics 3 sem. hrs.

Permutations and combinations, recurrence relations, inclusions and exclusion, Polya's theory of counting, graph theory, transport networks, matching theory. Offered occasionally. *Prereq: MATH 090.*

MATH 160. Theory of Probability 3 sem. hrs. Random variables, distributions, moment generating functions of random variables, various derived probabilistic models and applications. Recommended, with MATH 161, for students in mathematics, engineering, and the physical and behavioral sciences. Offered fall term. *Prereq: MATH 082.*

MATH 161. Mathematical Statistics 3 sem. hrs.

Sampling theory and distributions, estimation and hypothesis testing, regression, correlation, analysis of variance, non-parametric methods, Bayesian statistics. Offered spring term. *Prereq: MATH 160.*

MATH 162. Time Series Analysis 3 sem. 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 occasionally. *Prereq: MATH 082 or equivalent.*

MATH 163. Regression Analysis 3 sem. 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 occasionally. *Prereq: MATH 164 or equivalent.*

MATH 164. Statistical Methods 3 sem. hrs. Probability, discrete and continuous distributions. Treatment of data, point and interval esti-

mation, hypothesis testing. Large and small sample methods, regression, time series, non-parametric methods. An introductory applications-oriented course recommended for students who wish to acquire a basic understanding of statistical methods. Offered every term. *Prereq: MATH 071; or MATH 073; or MATH 080; Does not carry graduate credit for MSCS graduate students. May not be taken for credit by those who have completed MATH 161.*

MATH 166. Biostatistical Methods and Models 3 sem. 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 normally be allowed for both MATH 164 and MATH 166. Offered spring term. *Prereq: One semester of calculus*

MATH 167. Theory of Optimization 3 sem. 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. Offered occasionally. *Prereq: MATH 083; or MATH 121.*

MATH 168. Computational Statistics 3 sem. hrs.

Analysis of raw data and selection of appropriate estimation and hypothesis testing techniques. Emphasis on exploratory analysis, model building, data transformations, multivariate and stepwise techniques, error analysis. Course will make extensive use of statistical computer packages. Offered occasionally. *Prereq: MATH 161; or MATH 164.*

MATH 180. Intermediate Analysis 1 3 sem. hrs.

Limits and continuity, differentiability, Riemann integration. Topology of N-dimensional spaces. Offered fall term. *Prereq: MATH 083; or MATH 121.*

MATH 181. Intermediate Analysis 2 3 sem. hrs.

Transformations of N-spaces, line and surface integrals, sequences and series, uniform convergence. Offered occasionally. *Prereq: MATH 180.*

MATH 182. Complex Variables 3 sem. hrs.

Complex numbers, analytic functions, differentiation, series expansion, line integrals, singularities, and residues. Offered spring term. *Prereq: MATH 082.*

MATH 192. Co-op Work Period 0 sem. 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 193 during the following term. Offered every term. *Prereq: Jr. stndg; Fee*

MATH 193. Co-op Grading Period 1 sem. 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. Offered every term. *Prereq: Jr. stndg. and MATH 192.*

MATH 195. Independent Study 1-3 sem. hrs. Directed reading and/or research in Mathematics under a member of the staff. Offered every term. *Prereq: cons. of dept. ch.*

MATH 196. Undergraduate Seminar 3 sem. 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 *Timetable of Classes*. Offered occasionally. *Prereq: cons. of dept. ch.*

MATH 198. Topics in Mathematics or Statistics 1-3 sem. hrs.

Special topics selected from one of the various branches of mathematics or statistics. Specific topics to be announced in the *Timetable of Classes*. Offered occasionally.

MATH 199. Senior Thesis 2 sem. hrs.

Preparation of a thesis by approved students under the direction of an adviser from the staff. Offered every term. *Prereq: cons. of dept. ch.*

Computer Science (COSC)

▲COSC 050. Introduction to Computer Science 3 sem. 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). Offered every term. *Prereq: Two years of college preparatory mathematics. This course satisfies the computer option in the Arts & Sciences core curriculum.*

COSC 051. Structured Programming 3 sem. hrs.

An introduction to computer programming using JAVA. Designed for students seeking a rigorous foundation in programming skills. Includes data types, data structures, control structures, and design methodologies. Also includes a brief introduction to those features of the UNIX operating system that are used in the course (file system, editors, compilers, etc.). Offered every term. *Prereq: Two years of college preparatory mathematics.*

COSC 054. Principles of Computer Science

3 sem. hrs.

A survey of computer science that relates mathematical and theoretical foundations to the applied topics discussed. Covers topics such as development and implementation of algorithms, machine organization, operating systems structure, programming languages, data organization, and issues of computability. Includes programming projects of intermediate size and complexity that reinforce the topics presented. Offered every term. *Prereq: COSC 051.*

COSC 055. Data Structures 3 sem. hrs.

A study of the major classes of data structures and the algorithms used to build, examine, and manipulate them. *Prereq: COSC 054; Credit will not be given for both COSC 154 and COSC 055. Assumes knowledge of the JAVA programming language.*

COSC 100. Problem Solving - Programming

1 sem. 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. Offered fall term. *Prereq: cons. of instr.; S/U grade assessment.*

COSC 146. Numerical Analysis 3 sem. 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. Offered fall term. *Prereq: COSC 051 and MATH 081; or GEEN 021 and MATH 081; or GEEN 051 and MATH 081; Credit will not be given for both MATH 146 and COSC 146.*

COSC 148. Hardware Systems 3 sem. hrs.

Architecture of hardware systems and how their features affect the hardware/software interface. Topics include information representation, addressing techniques, communication protocols, polling vs. interrupt handling, microprogramming, assembly language programming, and hardware support for operating systems. Offered every term. *Prereq: COSC 054.*

COSC 149. Operating Systems 3 sem. hrs.

Fundamental concepts of operating systems including memory management, scheduling, concurrent processing, device management, file systems, networking, security, and system performance. Examples are drawn from legacy and modern operating systems. Offered every term. *Prereq: COSC 055 and COSC 148; or COSC 154.*

COSC 151. Analysis of Algorithms

3 sem. hrs.

Computational complexity and types of algorithms such as divide-and-conquer, greedy,

probabilistic, graph transversal, heuristic, and parallel algorithms. Offered occasionally.

Prereq: COSC 055 and MATH 090.

COSC 152. Programming Languages

3 sem. hrs.

A comparative study of programming paradigms and representative high-level programming languages. Topics include control of data, control of execution, operating environment, and the role of a language as an organizational tool. Offered fall term. *Prereq: COSC 055 and COSC 148; or COSC 154.*

COSC 153. Principles of Database Systems

3 sem. hrs.

The internal, conceptual, and external levels of database systems as reflected in the relational, network, and hierarchical database models. Query languages. File organizations appropriate for database systems. Principles and methods for database design. Offered fall term. *Prereq: COSC 055; or COSC 154.*

COSC 154. Data Structures for Engineers

3 sem. hrs.

The study of popular data structures such as lists, stacks, queues and trees and their related algorithms. Knowledge of JAVA is a prerequisite. Offered every term. *Prereq: COSC 051; or GEEN 051; Credit will not be given for both COSC 154 and COSC 055. Does not carry graduate credit for MSCS graduate students. Knowledge of JAVA.*

COSC 157. Formal Languages and Computability 3 sem. hrs.

The hierarchy of formal languages, automata, and grammars with application to parsing. Limitations of computational processes and the implications of the Church-Turing thesis. Offered fall term. *Prereq: COSC 055 and MATH 090; or COSC 154.*

COSC 158. Computer Systems Analysis

3 sem. hrs.

Large applications systems involve many people over a long life span. Assess and apply computing techniques in a cost-effective and usable way. Produce large software systems which are reliable, understandable, and which can be maintained. Software life cycle (requirements, design, implementation, testing, maintenance), human factors analysis, project management. Projects help simulate the life of a working systems analyst. Offered spring term. *Prereq: COSC 149 or equivalent and COSC 152 or equivalent.*

COSC 159. Fundamentals of Artificial Intelligence 3 sem. hrs.

Survey of topics in the field of artificial intelligence with emphasis on the underlying concepts on which intelligent systems are developed (such as production systems, heuristics, the predicate calculus, and theorem proving techniques). Offered spring term. *Prereq: COSC 152.*

COSC 170. Compiler Construction

3 sem. hrs.

Techniques of lexical analysis, parsing, and code generation, including theoretical founda-

tions and the practical concerns of implementation. Offered spring term. *Prereq: COSC 148 and COSC 157; or COSC 154 and COSC 157.*

COSC 172. Networks and Internets

3 sem. hrs.

Fundamentals of networking and internetworking including such topics as network and internet protocols, security, reliability, maintenance, support of internet applications and distributed systems, and domain setup and administration. Offered annually. *Prereq: COSC 148 and COSC 149.*

COSC 174. Programming Computer Games

3 sem. hrs.

Explore the algorithms, data structure, and tricks used to program computer video games. Emphasis on arcade-style video games (new and classic) written in JAVA. Topics include 2D animation, sprites, interaction, music/sound, 3D worlds, network games. Underlying issues include Graphical User Interface programming, multi-threaded applications, realtime programming, use of sophisticated API's, and networked client-server applications. Offered annually. *Prereq: COSC 055; or COSC 154.*

COSC 192. Co-op Work Period 0 sem. 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 193 during the following term. Offered every term. *Prereq: Jr. stndg; Fee*

COSC 193. Co-op Grading Period 1 sem. 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. Offered every term. *Prereq: Jr. stndg. and COSC 192.*

COSC 195. Independent Study

1-3 sem. hrs.

Directed reading and/or research in computer science under a member of the staff. Offered every term. *Prereq: cons. of dept. ch.*

COSC 196. Undergraduate Seminar

3 sem. 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 *Timetable of*

Classes. Offered occasionally. *Prereq:* cons. of dept. ch.

COSC 198. Topics in Computer Science
1-3 sem. hrs.

Special topics selected from one of the various branches of computer science. Specific topics to be announced in the *Timetable of Classes*. Offered occasionally.

COSC 199. Senior Thesis 2 sem. hrs.
Preparation of a thesis by approved students under the direction of an adviser from the staff. Offered every term. *Prereq:* cons. of dept. ch.

PHILOSOPHY (PHIL)

Chairperson and Professor: J. Jones
Assistant Chairperson and

Associate Professor: Starr

Professor: Anderson (*Emeritus*), Ashmore (*Emeritus*), Carter, Kainz (*Emeritus*), Tallon, Teske, Wreen

Associate Professor: Dooley, Foster, Gibson, Goldin, Harrison, Ibáñez-Noé, Krettek, McNulty, Naus, Peressini, Prendergast (*Emeritus*), Rice, Rousseau (*Emerita*), Snow, South, R. Taylor, Twetten, Vater, Vandevelde

Assistant Professor: Adams, Bauer, Flaherty, Monahan, C. Schmidt

Adjunct Associate Professor: Stohrer

MAJOR: History of Philosophy

Thirty hours, including either PHIL 001 or 099, 050, 102 or 142, 104 and three courses on the history of philosophy (PHIL 112–119), plus 9 hours of electives.

MAJOR: Social Philosophy

Thirty hours, including PHIL 001 or 099, 050, 104, one of the following: 105, 108, 191, 192 or approved courses from 190 or 196; three of the following: 102 or 142, 106, 107, 110; plus 9 hours of electives.

MINOR:

Twenty-one hours, including either PHIL 001 or 099, 050, 102 or 142, and 104.

TEACHING MAJOR:

Thirty-six hours including either PHIL 001 or 099, 050, 104, 105, 112 or 113, 114, 120, 180, and one of the following: 115, 117, 160, 185. Students should see the department adviser for middle school/secondary teaching majors or minors to consult about the appropriate sequence of courses. It is also important that prospective teachers study carefully the School of Education section in this bulletin regarding university and state requirements (in addition to department requirements) for teacher certification.

Please refer to "Core Curriculum requirements for Education Majors" under "Graduation Requirements" in the College of Arts and Sciences section of this bulletin.

TEACHING MINOR:

Twenty-four hours including either PHIL 001 or 099, 050, 104, 105, and 180. Education requirements must be completed for certification.

INTRODUCTORY COURSES

PHIL 001. Logic

 3 sem. hrs.

The goal of the course is to provide the student with an understanding of correct reasoning as it is employed in ordinary discourse. To this end, the course will study topics such as: terms and propositions, definition, opposition, induction and deduction, reasoning and argumentation, fallacies in argument. Offered every term. Freshman standing recommended. Freshman standing recommended. May not be taken by Engineering students to fulfill Philosophy requirement.

▲PHIL 050. Philosophy of Human Nature

 3 sem. 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. Offered every term. May not be taken by first semester Freshmen.

PHIL 099. Modern Logic

 3 sem. hrs.

Introduction to techniques of symbolic logic. Primary emphasis on practical problem-solving. Propositional calculus, monadic predicate logic, and first-order general predicate logic. Techniques of truth-functional analysis and natural deduction. This course is equivalent to MATH 099. Offered occasionally. May not be taken by Engineering students to fulfill Philosophy requirement. This course is equivalent to MATH 099.

COURSES FOR JUNIORS AND SENIORS

PHIL 102. Metaphysics

 3 sem. hrs.

Investigation of such fundamental problems as the meaning and nature of reality as opposed to the unreal, the unity and diversity of real things, substance and accident; internal and external principles or causes which are necessary for an intelligible explanation of reality. Offered annually. *Prereq:* Jr. stndg. and PHIL 050.

PHIL 103. Philosophy of God

 3 sem. 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. Offered annually. *Prereq:* Jr. stndg. and PHIL 050.

▲PHIL 104. Theory of Ethics

 3 sem. 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. Offered every term. *Prereq:* PHIL 050; *Student must have at least 45 credit hours earned. May not be taken by first semester sophomores.*

PHIL 105. Contemporary Ethical Problems

 3 sem. hrs.

Ethical considerations such as human rights and responsibilities in social and racial justice, war and international relations, expression of

dissent, and sexual conduct. Offered every term. *Prereq:* Jr. stndg. and PHIL 104.

PHIL 106. Philosophy of State

 3 sem. 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. Offered annually. *Prereq:* Soph. stndg. and PHIL 050.

PHIL 107. Philosophy of Law

 3 sem. 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. Offered annually. *Prereq:* Jr. stndg. and PHIL 050.

PHIL 108. Business Ethics

 3 sem. 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." Offered every term. *Prereq:* Jr. stndg. and PHIL 104.

PHIL 110. Philosophy of Community

 3 sem. 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. Offered annually. *Prereq:* Soph. stndg. and PHIL 050.

PHIL 112. Ancient Philosophy

 3 sem. hrs.

The main tendencies in the West, beginning with the early Greeks and continuing through the classical Roman philosophers. The philosophies of Plato, Aristotle, the Stoics, Plotinus. Selections read in translation. Offered every term. *Prereq:* Soph. stndg. and PHIL 050; *First semester sophomore standing.*

PHIL 113. Early Medieval Philosophy

 3 sem. 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. Offered annually. *Prereq:* Jr. stndg. and PHIL 050.

PHIL 114. Modern Philosophy

 3 sem. hrs.

Beginnings of modern philosophy studied in the social, scientific, religious, and literary movements of the 16th century. Descartes and the philosophers whom he influenced. Hume, Kant. Special emphasis on the reading of selections from the philosophers' own works. Offered annually. *Prereq:* Soph. stndg. and PHIL 050.

PHIL 115. American Philosophy

 3 sem. hrs.

Outstanding figures from the colonial period to present day with emphasis on two or more of the following: Pierce, James, Dewey and Royce. Offered annually. *Prereq:* Jr. stndg. and PHIL 050.

PHIL 117. Nineteenth Century German**Philosophy** 3 sem. hrs.

A survey of some of the philosophical developments taking place in Germany from the post-Kantian idealism of Fichte, Schelling and Hegel to the thought of Nietzsche. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 119. Late Medieval and Renaissance**Philosophy** 3 sem. hrs.

Outstanding figures and movements in late 13th and 14th centuries, and Renaissance. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 120. Philosophy of Art and Beauty

3 sem. hrs.

The relationship of art and nature. The artist's knowledge, which is practical and intuitive. The artist's work. Ethics and art. The objectivity and criteria of beauty in art. Offered annually. *Prereq: Soph. stndg. and PHIL 050.*

PHIL 121. Philosophy of Language

3 sem. hrs.

An examination of philosophical approaches to language selected from these: logical syntax (Carnap), ordinary language (Austin), linguistic (Chomsky), phenomenological (Husserl). Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 122. Philosophy and Literature

3 sem. hrs.

The relationship between philosophy and literature. The course will treat the following: philosophy in literature as the search for philosophical insights embedded in literary texts; philosophy of literature as a branch of aesthetics peculiar to literature; philosophical texts as literary expression as, for example, in the Straussian and deconstructionist approaches. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 130. Philosophy of Natural Science

3 sem. hrs.

Topics such as epistemological problems encountered in the natural sciences. The aim of science, the kind of knowledge it attains, and the role of hypotheses. Elaboration of a systematic cosmology. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050; Two semesters of science*

PHIL 131. Technology and the Human**Condition** 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 132. Environmental Philosophy

3 sem. hrs.

Philosophical inquiry into the relationship between humans and nature. Moral, scientific, and social problems posed by global environmental crises. Selected issues in value theory, ethics and aesthetics such as the value standing of natural objects and systems, the morality of trade-offs between species and the ethics of limiting consumption and population. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 135. Philosophy of History 3 sem. hrs.

Meaning of history. Relation to philosophy and other disciplines. Possibility of a philosophy and theology of history. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 142. Philosophy of Knowledge

3 sem. hrs.

Knowledge in general and of the cognitive acts—sensory and intellectual. The meaning of truth and man's attainment of it, the cause of error, the nature of science, and the diversity of human knowledge. Offered annually. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 143. Feminist Philosophy 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 150. Marx and Marxism 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 151. Philosophy and History of Crime and Punishment 3 sem. 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. Offered annually. *Prereq: Soph. stndg. and PHIL 050; Same as HIST 151 and CRLS 151. May be counted toward the core curriculum requirement in either Philosophy or Social-behavioral Science.*

PHIL 158. Philosophy of Education

3 sem. 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 158. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 160. Existentialism 3 sem. hrs.

Writings of major 19th and 20th century Existentialists, including several of the following: Kierkegaard, Nietzsche, Heidegger, Jaspers, Marcel, and Sartre. Offered annually. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 173. Philosophy of Religion 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 180. Special Methods of Teaching Philosophy in the Secondary School

3 sem. hrs.

Problems, curricular materials, procedures, and sources in the teaching of philosophy; with special emphasis upon contemporary pilot programs in philosophy at the secondary level. Restricted to students pursuing the teaching major or minor. *Prereq: Jr. stndg. and EDUC 079 and PHIL 050 and cons. of instr.; Admission to School of Education required.*

PHIL 185. Twentieth Century Anglo-American Philosophy 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 188. Eastern Philosophy 3 sem. hrs.

The major systems of philosophy of India and China; early Vedic and Upanishadic systems, Buddhism, Brahmanism, Hinduism, Confucianism, Taoism, and Zen. Emphasis on the key ideas in Eastern philosophy. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 189. African-American Philosophy

3 sem. hrs.

Historical and contemporary philosophical writings by African-Americans such as W.E.B. DuBois, Malcolm X, Cornel West, and Angela Davis. Perennial issues in philosophy of human nature and social/political philosophy from an African-American perspective, including some of the following topics: the nature of racism, race and self-consciousness, contemporary race relations, African Philosophy and its relation to African-American philosophy, and feminism. Offered occasionally. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 190. Special Questions in Philosophy

3 sem. hrs.

Offered every term. *Prereq: Jr. stndg. and PHIL 050.*

PHIL 191. Medical Ethics 3 sem. hrs.

Prereq: Jr. stndg. and PHIL 104.

PHIL 192. Health Care Ethics 3 sem. hrs.

Approaches to ethics, moral deliberation and decision making in the context of clinically-based health care. Topics may include: professional-client relationship, professional socialization, institutional and social settings of health care delivery, care of selected populations, and justice in the allocation of health care resources. Prior clinical experience required. Offered every term. *Prereq: Sr. stndg. and NURS Major and PHIL 104; or Sr. stndg. and PHIL 104 and cons. of instr.*

PHIL 195. Independent Study

1-3 sem. hrs.

Offered every term. *Prereq: Jr. stndg. and PHIL 050 and cons. of dept. ch.*

PHIL 196. Undergraduate Seminar

3 sem. 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 *Timetable of Classes*. Offered every term. *Prereq: Jr. stdng. and PHIL 050 and cons. of instr.*

PHIL 199. Senior Thesis 3 sem. hrs.

Preparation of a thesis by approved students under direction of an adviser. Offered every term. *Prereq: cons. of dept. ch.*

PHYSICS (PHYS)

Chairperson and Professor: Howes

Professor: Burch, Matthys, Mendelson

(Emeritus), S. Tani (Emeritus)

Associate Professor: Collins

Assistant Professor: Politano, Stockdale

Visiting Assistant Professor: Dixon, Sirola

Research Professor: Lee

Research Associate Professor: Sorbian

Lecturer: Buxton, Joseph

Laboratory Supervisor: Vigil

Adjunct Instructor: Chaudhuri, Rybski

MAJOR:

The following forms a common physics core and specifies the minimum technical course requirements for a bachelor of science in physics for students with diverse career interests: PHYS 013, 014 (or 001, 002, or 003, 004), 104, 105, 111, 131, 155, plus eight additional hours in upper division physics courses (30 hours); MATH 080, 081, 082, 083 (16 hours); and CHEM 001 and 002 (8 hours).

MINOR

Twenty hours, including PHYS 001 and 002, or 003 and 004, or PHYS 013 and 014.

AREAS OF CONCENTRATION:

Students may use their electives to develop concentrations that prepare them for specific careers. Several possible concentrations are outlined below.

To meet admission expectations for graduate study in physics, students should follow the traditional concentration. This consists of the common physics core plus PHYS 112, 124, 132, 156, 157, and 162 (for a total of 38 hours in physics), MATH 182 (for a total of 19 hours in mathematics), and either three additional hours in upper division mathematics, or PHYS 148.

To pursue medical or dental professional studies, students should follow the premed-preudent concentration or the physics in medicine concentration. They should also consult with their pre-professional adviser for specifics regarding the various medical and dental school admission requirements. The premed-preudent concentration consists of the common physics core plus BIOL 001, 002, 090, and CHEM 123, 124. The physics in medicine concentration, which is also recommended for students interested in biomedical research, consists of the common physics core plus BIOL 001, 002, 090, CHEM 123, 124 (for a total of 16 hours in chemistry), MATH 164 (for a total of 19 hours in mathematics), and PHYS 193. The

physics electives should include PHYS 112 and 132.

The computational physics concentration serves to develop competence in using the computer as a scientific tool. It consists of the common physics core plus MATH 121, COSC 060, 061, 065, 066, 146 and two additional upper level COSC courses (for a total of 37 hours of mathematics and computer science). One of the physics electives should be PHYS 149. The mathematical physics concentration develops the mathematical aspects of physics. It consists of the common physics core plus MATH 121, 124, and 182 (for a total of 25 hours of mathematics). Two of the physics electives should be PHYS 112 and PHYS 162. Students pursuing the computational physics or mathematical physics concentrations may request from the physics department a waiver of the CHEM 001, 002 requirements, to substitute additional COSC or MATH courses.

Suggested course sequences for these concentrations are available from the physics department.

TEACHING MAJOR/MINOR:

Students interested in becoming elementary or secondary school teachers should contact the School of Education early in their Marquette careers. The physics teaching major is the physics major plus PHYS 009 (4 sem. hrs.) and BIOL 001 or ARSC 010, 011, plus one COSC course. The physics teaching minor is twenty-two hours including: PHYS 001 and 002, or PHYS 003 and 004, or PHYS 013 and 014 and PHYS 009 (4 sem. hrs.), 104, and 105.

Please refer to the "Core Curriculum Requirements for Education Majors" under "Graduation Requirements" in the College of Arts and Sciences section of this bulletin.

▲ PHYS 001. General Physics 1 4 sem. hrs.

Newton's laws, linear motion, circular and harmonic motion, fluids, heat, kinetic theory, wave motion and sound. Offered fall term. 3 hrs. lec., 2 hrs. lab., 1 hr. quiz. *Prereq: High school algebra, geometry, and trigonometry or equivalent.*

▲ PHYS 002. General Physics 2 4 sem. hrs.

Continuation of PHYS 001. Electrostatics, DC circuits, magnetism, electromagnetic induction, light, optical instruments, interference and diffraction of light, modern physics. Offered spring term. 3 hrs. lec., 2 hrs. lab., 1 hr. quiz. *Prereq: PHYS 001.*

▲ PHYS 003. General Physics with**Introductory Calculus 1** 4 sem. hrs.

Survey of classical physics for science majors 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. Applications of these principles to simple harmonic motion, wave motion, and fluids. Thermodynamics. A command of high school algebra, geometry and trigonometry is assumed. Requires the use of introductory calculus. Offered fall term. 3 hrs. lec., 2 hrs. lab., 1 hr. quiz. MATH 080 should be taken concurrently or previously.

▲ PHYS 004. General Physics with Introductory Calculus 2 4 sem. hrs.

A continuation of PHYS 003. A survey of classical electromagnetic theory and optics, with a brief 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. Optics: geometric optics, including lenses and mirrors; physical optics, including interference and diffraction phenomena. Modern physics: the origins of quantum mechanics and models of the atom. Offered spring term. 3 hrs. lec., 2 hrs. lab., 1 hr. quiz. *Prereq: MATH 080 and PHYS 003; Students may either take MATH 081 concurrently or must have taken MATH 081 previously.*

PHYS 005. Perspectives in Physical Sciences 1 3 sem. hrs.

Basic concepts in the physical sciences and their impact on technology, the humanities and the world. Course designed for non-science majors. Offered occasionally. This course satisfies the Arts & Sciences College Curriculum Natural Science requirement.

PHYS 006. Perspectives in Physical Science 2 3 sem. hrs.

Continuation of PHYS 005. Course designed for non-science majors. Offered occasionally. *Prereq: PHYS 005.* This course satisfies the Arts and Sciences College Curriculum Natural Science requirement.

▲ PHYS 007. Survey of Meteorology 3 sem. 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. Offered fall term. This course satisfies the Arts & Sciences College Curriculum Natural Science requirement.

▲ PHYS 008. Astronomy and Space Physics 3 or 4 sem. 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. The 4 credit option is only for Broad Field Science Majors, for whom it is required.

▲ PHYS 009. Earth and Environmental Physics 3 or 4 sem. 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. The 4 credit option is only for Broad Field Science Majors and for physics

teaching majors and minors, for whom it is required.

PHYS 013. Classical and Modern Physics with Calculus 1 4 sem. hrs.

A study of motion in its various forms, translational, rotational, vibrational, and wave, that emphasizes their underlying unity, especially the central role of energy and its conservation, and their basis in the fundamental Newtonian laws of motion. These ideas are used to explain thermal processes. Offered fall term. 3 hrs. lec., 2 hrs. lab., 1 hr. quiz. *Prereq: MATH 080 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 003 and PHYS 013.*

PHYS 014. Classical and Modern Physics with Calculus 2 4 sem. 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 geometric and physical optics, atomic spectra, and nuclear decay. Offered spring term. 3 hrs. lec., 2 hrs. lab., 1 hr. quiz. *Prereq: MATH 080 and MATH 081 and PHYS 013 which may be taken concurrently; Students cannot receive credit for both PHYS 004 and PHYS 014.*

PHYS 018. Introduction to Research
0 sem. 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. Offered spring term.

PHYS 080. Lecture without Laboratory - Lower Division 3 sem. hrs.
Prereq: cons. of dept. ch.

PHYS 081. Laboratory without Lecture - Lower Division 1 sem. hr.
Prereq: cons. of dept. ch.

PHYS 104. Modern Physics: Atoms, Particles, and Quanta 3 sem. hrs.

A survey of 20th century physics concentrating on atoms and particles. Quantum mechanics: origins, the Schrödinger 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. Offered fall term. *Prereq: MATH 082 and PHYS 002 which may be taken concurrently; or MATH 082 and PHYS 004 which may be taken concurrently.*

PHYS 105. Modern Physics: The States of Matter 3 sem. 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. Offered spring term.

Prereq: MATH 082 which may be taken concurrently and PHYS 002; or MATH 082 which may be taken concurrently and PHYS 004.

PHYS 111. Classical Mechanics 3 sem. 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. Offered fall term. *Prereq: MATH 083 and PHYS 002; or MATH 083 and PHYS 004.*

PHYS 112. Quantum Mechanics 3 sem. 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. Offered spring term. *Prereq: MATH 083 and PHYS 104.*

PHYS 124. Modern Optics 3 sem. hrs. Geometric optics, classical wave theory of optics, interference, diffraction, polarization, electromagnetic theory of light, interaction of light and matter, lasers and coherence. Offered spring term. *Prereq: MATH 081 and PHYS 002; or MATH 081 and PHYS 004.*

PHYS 131. Electricity and Magnetism 1
3 sem. 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. Offered fall term. *Prereq: MATH 082 and PHYS 002; or MATH 082 and PHYS 004.*

PHYS 132. Electricity and Magnetism 2
3 sem. 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. Offered spring term. *Prereq: PHYS 131.*

PHYS 145. Introduction to Biophysics
3 sem. hrs.

Laws of physics applied to biological organisms: Biomechanics, fluids and blood circulation, nerve cells and cell-cell communication, acoustics (hearing), and optics (vision). Discussion of some of the experimental techniques used to investigate the biological structure of organisms. Offered occasionally. *Prereq: PHYS 002; or PHYS 004.*

PHYS 148. Mathematical Methods for Physicists 3 sem. hrs.

This course presents mathematical methods applied to physical problems including Fourier Analysis, special functions, eigenvalue problems, the calculus of variations, probability and statistics. Offered occasionally. *Prereq: MATH 083 and PHYS 003 and PHYS 004.*

PHYS 149. Computational Physics
3 sem. 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. Offered occasionally. *Prereq: PHYS 111 and PHYS 131; or EECE121 and PHYS 111; or cons. of instr.*

PHYS 155. Electronics Lab 2 sem. 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. Offered fall term. 1 hr. lec., 3 hrs. lab. *Prereq: PHYS 004.*

PHYS 156. Contemporary Physics Lab 1
2 sem. 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. Offered spring term. 1 hr. lec., 3 hrs. lab. *Prereq: PHYS 155.*

PHYS 157. Contemporary Physics Lab 2
2 sem. hrs.

Continuation of the experiments in PHYS 156. Measurement and propagation of uncertainty, curve fitting, automated data collection and experiment control. Offered spring term. 1 hr. lec., 3 hrs. lab. *Prereq: PHYS 156.*

PHYS 162. Introduction to Thermodynamics
3 sem. hrs.

Fundamental concepts of thermodynamics: temperature, internal energy, entropy and thermodynamic potentials. Laws of thermodynamics, their consequences and applications. Introduction to statistical thermodynamics. Offered fall term. *Prereq: MATH 082 and PHYS 105.*

PHYS 171. Atomic Physics 3 sem. 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. Offered occasionally. *Prereq: PHYS 112 and PHYS 131.*

PHYS 172. Introduction to Nuclear and Elementary Particle Physics
3 sem. 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. Offered occasionally. *Prereq: PHYS 112.*

PHYS 175. Introduction to Solid State**Physics** 3 sem. 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. Offered occasionally. *Prereq: PHYS 105 and PHYS 112.*

PHYS 193. Biophysics Seminar 1 sem. 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. Offered both fall and spring terms. *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 195. Independent Study

1-3 sem. hrs.

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. Offered every term. *Prereq: cons. of dept. ch.*

PHYS 196. Seminar in Physics 1 sem. 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. Offered occasionally. *Prereq: cons. of dept. ch.*

PHYS 197. Undergraduate Research

1-3 sem. hrs.

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 Consent Required; consent of a regular physics faculty member.*

PHYS 198. Topics of Special Interest in Contemporary Physics 3 sem. 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. Offered occasionally. *Prereq: cons. of dept. ch.*

PHYS 199. Senior Thesis 2 sem. 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 Consent Required; consent of a regular physics faculty member.*

POLITICAL SCIENCE (POSC)

Chairperson and Professor: Swank
Assistant Chairperson and Associate Professor: Barrington
Professor: Boles, Dobbs, Fleet, Friman, LeBlanc, Rhodes (Emeritus), Thomas, Wolfe
Associate Professor: McAdams, McCormick
Assistant Professor: Barrett
Visiting Assistant Professor: Groff, Shelledy
Adjunct Professor of American Government; Director, Marquette University Les Aspin Center for Government: O'Brien

MAJOR:

Thirty-three hours of political science courses, in one of the three tracks described below, including six credits in major writing development classes (specified in each term's *Schedule of Classes*). Students with more than one major must have at least fifteen hours of political science that is not counted for another major. Students majoring in political science will choose one of the following three options:

Track I: Politics

POSC 020, 040, 060, and 080, and seven upper division courses chosen from at least three of Groups I-IV. Recommended major courses: POSC 191 and POSC 193. Recommended cognate courses: ECON 043, ECON 044, ENGL 104, MATH 070, MATH 071, and any foreign language 082 or 182.

Track II: Law and Politics

POSC 020 and 080, and either POSC 040 or 060; eight additional courses, including: POSC 133 and 134; POSC 165; POSC 129 or 135; one other course from Group I; and one course from Group II. Recommended major courses: POSC 179, 182, 191 and 193. Recommended cognate courses: ECON 043, ECON 044, MATH 071, and ENGL 104.

Track III: Global Politics

POSC 020, 040, and 060; eight additional courses, including: POSC 165 or 167; POSC 177 or 178; one of: POSC 170, 173, 174, 175, 176, 179; one of: POSC 128, 129, 130, 135; and two courses from Group III. Recommended major courses: POSC 080 and additional upper division courses from Groups III and IV. Recommended cognate courses: a third year of foreign language, ECON 043 and 044.

Note: 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.

MINOR:

Eighteen hours, including POSC 020, 040, 060 and 080.

TEACHING MAJOR:

Thirty-six hours, including POSC 020, 040, 060 and 080, and also including a second, upper division course from each of Groups I-IV. The department also recommends that teaching majors select cognate courses from those listed in the various tracks above. Persons holding Wisconsin's Broad Field Social Studies license will be qualified to teach political science if they complete nine semester hours in the discipline.

Students should see the department adviser for middle school/secondary teaching majors or minors to consult about the appropriate sequence of courses. It is also important that prospective teachers study carefully the School of Education section of this bulletin regarding university and state requirements (in addition to department requirements) for teacher certification.

Please refer to "Core Curriculum Requirements for Education Majors" under "Graduation Requirements" in the College of Arts and Sciences section of this bulletin.

TEACHING MINOR:

Twenty-four hours, including POSC 020, 040, 060 and 080, and also including a second, upper division course from each of Groups I-IV.

5-YEAR BA/MA PROGRAM:

The Department of Political Science offers a special program enabling students to earn an undergraduate degree and a Master of Arts degree in political science or international affairs in five years. For information, consult the *Graduate Bulletin* or contact the Department of Political Science.

INTRODUCTORY COURSES**▲ POSC 020. American Politics** 3 sem. 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. Offered every term.

▲ POSC 040. Comparative Politics

3 sem. hrs.

Types of government, ranging from democratic to totalitarian. The parliamentary alternative to presidential democracy. Political modernization and revolution. Offered every term.

▲ POSC 060. International Politics

3 sem. hrs.

Patterns of interaction among nations and sub-national 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. Offered every term.

POSC 080. Justice and Power 3 sem. hrs.

The debate between ancients and moderns about the fundamental elements of political life; as seen in works by Plato, Aristotle, Machiavelli, and Hobbes. Should be taken by POSC majors during sophomore year. Offered every term.

GROUP I: POLITICAL THEORY**POSC 080. Justice and Power** 3 sem. hrs.

Course description listed under Introductory Courses.

PPOSC 100. Citizens, Beasts, or Gods?

3 sem. hrs.

Are humans made for citizenship, for apolitical states of nature, or for self-transcendence into higher, suprapolitical beings? Authors such as Plato, Aristotle, Sophocles, Rousseau, Marx, Mill, and Nietzsche. Offered annually.

Prereq: POSC 080; or Jr. stndg.

POSC 101. The Best Constitution 3 sem. hrs.
What is the best constitution? The purposes, organizational principles, social bases, problems, and relative merits of ancient and modern types of kingship, tyranny, aristocracy, oligarchy, and democracy. Authors such as Xenophon, Aristotle, Locke, Montesquieu, and Rousseau. Offered annually. *Prereq: POSC 080; or Jr. stndg.*

POSC 102. Democracy and Its Problems 3 sem. hrs.

Do democracies inevitably destroy themselves after a few decades or centuries, or can measures be taken to preserve them for longer periods? What factors affect their stability? Authors such as Thucydides, Machiavelli, "Publius," Tocqueville, and selected contemporaries. Offered annually. *Prereq: POSC 080; or Jr. stndg.*

POSC 104. Politics and the Kingdom of God 3 sem. hrs.

Do the messianic prophecies and events of the Hebrew and Christian scriptures imply or demand the transformation of politics into embodiments of the divine Kingdom? What are the implications of revelation for politics? Biblical texts, patristic, medieval and modern theories. Offered occasionally. *Prereq: POSC 080; or Jr. stndg.*

POSC 105. Karl Marx 3 sem. hrs.

Primary works on freedom and alienation, history, capitalism, revolution, and socialism that have inspired Marxist movements. Offered every two years. *Prereq: POSC 080; or Jr. stndg.*

POSC 107. Political Novels 3 sem. hrs.

Great novelists of the past two centuries have offered important analyses of the grounds of order and the causes of disorder in human affairs. Achebe, Bellow, Conrad, Dostoyevsky, Mann, and Solzhenitsyn are among the writers selected for study. Offered annually. *Prereq: POSC 080; or Jr. stndg.*

POSC 108. Postmodern Politics 3 sem. hrs.
Nietzsche and the thinkers following in his wake who have tried to create a postmodern world. Offered every two years. *Prereq: POSC 080; or Jr. stndg.*

GROUP II: AMERICAN POLITICS

POSC 020. American Politics 3 sem. hrs.
Course description listed under Introductory Courses.

POSC 117. Urban Public Policy 3 sem. 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. Offered every two years. *Prereq: POSC 020; or Jr. stndg.*

POSC 118. Urban Politics 3 sem. 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. Offered every two years. *Prereq: POSC 020; or Jr. stndg.*

POSC 119. Politics of Race, Ethnicity, and Gender 3 sem. 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. Offered every two years. *Prereq: POSC 020; or Jr. stndg.*

POSC 121. Interest Group Politics 3 sem. 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 annually at Les Aspin Center only. *Prereq: POSC 020; or Jr. stndg.*

POSC 122. Religion and Politics 3 sem. 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. Offered occasionally. *Prereq: POSC 020; or Jr. stndg.*

POSC 124. Elections, Parties and Political Opinion 3 sem. hrs.

The development, functions, and membership of political parties in the United States. The opinions Americans hold on various issues, and how these opinions are influenced by institutions, including the family, schools, and the media. Why Americans vote as they do, including the effect of political parties and issues. Voter apathy and alienation and their sources. Offered every two years. *Prereq: POSC 020; or Jr. stndg.*

POSC 126. Media and Politics in the U.S. 3 sem. 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. Offered occasionally. *Prereq: POSC 020; or Jr. stndg.*

POSC 128. The United States Congress 3 sem. 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. Offered every two years on campus and annually at Les Aspin Center. *Prereq: POSC 020; or Jr. stndg.*

POSC 129. National Security Policy 3 sem. 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. Offered every two years. *Prereq: POSC 020; or Jr. stndg.*

POSC 130. The American Presidency 3 sem. 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. Offered every two years. *Prereq: POSC 020; or Jr. stndg.*

POSC 133. Constitutional Law 3 sem. hrs.

Development of American constitutional law in the areas of judicial power, separation of powers, the presidency, state and national regulation of commerce, the taxing and spending power, and the rise and decline of due-process property rights. Same as CRLS 133. Offered occasionally. *Prereq: POSC 020; or Jr. stndg.* Same as CRLS 133.

POSC 134. Civil Liberties 3 sem. hrs.

Development of American constitutional law in the areas of criminal defendants' rights, freedom of speech and religion, equal protection of the laws, and noneconomic due-process rights. Offered annually. *Prereq: POSC 020; or Jr. stndg.*

POSC 135. American Public Policy 3 sem. 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. Offered every two years. *Prereq: POSC 020; or Jr. stndg.*

POSC 136. Problems in Civil Liberties: Free Speech 3 sem. hrs.

Examines the constitutional principle of free speech through a close study of the major Supreme Court precedents and traces the foundations of competing legal positions to their roots in varying works of political philosophy. Offered occasionally. *Prereq: POSC 020; or Jr. stndg.*

POSC 137. Problems in Civil Liberties: Privacy 3 sem. hrs.

Examines the constitutional principle of privacy through a close study of the major Supreme Court precedents and traces the foundations of competing legal positions to their roots in varying works of political philosophy. Offered occasionally. *Prereq: POSC 020; or Jr. stndg.*

GROUP III: COMPARATIVE POLITICS

POSC 040. Comparative Politics 3 sem. hrs.
Course description listed under Introductory Courses.

POSC 141. Public Policy in Industrial Democracies 3 sem. 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 envi-

ronment. Offered annually. *Prereq: POSC 040; or Jr. stndg.*

POSC 142. European Politics 3 sem. 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. Offered annually. *Prereq: POSC 040; or Jr. stndg.*

POSC 145. Democracy, Authoritarianism and Totalitarianism 3 sem. 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. Offered occasionally. *Prereq: POSC 040; or Jr. stndg.*

POSC 148. Modern Revolutions 3 sem. 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. Offered every two years. *Prereq: POSC 040; or Jr. stndg.*

POSC 152. Russian and Post-Soviet Politics 3 sem. 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. Offered every two years. *Prereq: POSC 040; or Jr. stndg.*

POSC 154. Chinese Politics 3 sem. hrs.
Origins of the Chinese Revolution, political change and conflict in post-1949 China, and the contemporary political system and political developments. Offered annually. *Prereq: POSC 040; or Jr. stndg.*

POSC 155. Japanese and Korean Politics 3 sem. hrs.
Political culture, unique patterns of modernization, and the contemporary political system in Japan and the two Koreas. Offered occasionally. *Prereq: POSC 040; or Jr. stndg.*

POSC 156. Latin American Politics 3 sem. 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. Offered every two years. *Prereq: POSC 040; or Jr. stndg.*

POSC 158. Politics of the Indian Subcontinent 3 sem. 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. Offered every two years. *Prereq: POSC 040; or Jr. stndg.*

POSC 159. Third World Politics 3 sem. hrs.
Politics of agricultural development, industrialization, military intervention, and social and cultural conflict in Third World Countries. Offered every two years. *Prereq: POSC 040; or Jr. stndg.*

GROUP IV: INTERNATIONAL POLITICS

POSC 060. International Politics 3 sem. hrs.
Course description listed under Introductory Courses.

POSC 165. International Law 3 sem. 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. Offered annually. *Prereq: POSC 060; or Jr. stndg.*

POSC 167. International Organization 3 sem. 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. Offered annually. *Prereq: POSC 060; or Jr. stndg.*

POSC 170. United States Foreign Policy 3 sem. 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. Offered annually. *Prereq: POSC 060; or Jr. stndg.*

POSC 173. International Politics of Europe 3 sem. 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. Offered occasionally. *Prereq: POSC 060; or Jr. stndg.*

POSC 174. International Politics of the Middle East 3 sem. 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. Offered occasionally. *Prereq: POSC 060; or Jr. stndg.*

POSC 175. International Politics of Asia 3 sem. 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. Offered occasionally. *Prereq: POSC 040; or POSC 060; or Jr. stndg.*

POSC 176. United States-Latin American Relations 3 sem. 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.

tional trade in arms; nationalism, ethnic conflict, and wars of secession. Offered annually. *Prereq: POSC 060; or Jr. stndg.*

POSC 179. Politics of the Illicit Global Economy 3 sem. 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. Offered occasionally. *Prereq: POSC 060; or Jr. stndg.*

SPECIAL COURSES

POSC 182. Politics of the Internet 3 sem. 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. Offered occasionally. *Prereq: POSC 020; or POSC 040; or POSC 060; or POSC 080; or Jr. stndg.*

POSC 191. The Logic of Social Inquiry: The Kennedy Assassination 3 sem. 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. Offered annually. *Prereq: POSC 020; or Jr. stndg.*

POSC 193. Internship in Politics 1-4 sem. hrs.
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. A second internship may be taken in Washington, with permission of department chair or director of Les Aspin Center for Government. Second internships will count toward university elective credit, but not toward the political science major or minor. The 4-credit section is limited to students in the Washington Program. Offered every term. *Prereq: Jr. stndg. and 2.5 MU QPA and cons. of instr. and cons. of dept. ch.; or 2.5 MU QPA and POSC 020 and cons. of instr. and cons. of dept. ch.*

POSC 195. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq: Jr. stndg. and cons. of instr. and cons. of dept. ch.*

POSC 196. Undergraduate Seminar 3 sem. 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 *Timetable of Classes*. Offered occasionally. *Prereq: Jr. stndg. and cons. of instr.*

POSC 198. Topics in Political Science

2-3 sem. 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. Offered occasionally.

Prereq: Jr. stndg.

POSC 199. Senior Thesis 3 sem. hrs.

Preparation of a thesis by approved students under the direction of an adviser. Offered every term. *Prereq: Sr. stndg. and POSC 195 which may be taken concurrently and cons. of dept. ch.; Three semester hours of POSC 195 are required.*

PSYCHOLOGY (PSYC)

Chairperson and Associate Professor:

Wierzbicki

Professor: Francoi, Lueger, Quereshi

(Emeritus), Sheikh

Associate Professor: Czech, Grych, Guastello,

McDonald (Emeritus), Nash, Nielson,

Saunders,

Assistant Professor: de St. Aubin, Oswald,

Siderits, Wandrei

MAJOR:

Thirty-five hours including PSYC 001, 060 and 090, and at least one course from at least five of the following eight content areas: Developmental (101 or 103); Social (111 or 104); Learning (121 or 122); Assessment (127 or 131); History and Systems (128); Personality Theories (132); Physiological (129 or 135); and Abnormal (137).

MINOR:

Six courses in psychology, including PSYC 001.

TEACHING MAJOR:

Thirty-five hours including PSYC 001, 060, 090, 101, 121 or 122, 128, 131, 132, 137 and any two upper division courses.

Students should see the department adviser for middle school/secondary teaching majors or minors to consult about the appropriate sequence of courses. It is also important that prospective teachers study carefully the School of Education section of this bulletin regarding university and state requirements (in addition to department requirements) for teacher certification.

Please refer to Core Curriculum Requirements for Education Majors under Graduation Requirements in the College of Arts and Sciences section of this bulletin.

TEACHING MINOR:

Twenty-six hours including PSYC 001, 060, 090, 101, 128, 131, and 132.

EDUCATION COURSES FOR TEACHING MAJOR AND TEACHING MINOR:

Teaching majors and minors are also required to take 36 semester hours of courses in education including EDUC 008, 048, 078, 088, 095, 125, 135, 145, 158 and 175 or 176.

Elementary/middle school teacher preparation psychology majors may substitute EDUC 088 as an equivalent course to PSYC 107.

NURSING/PSYCHOLOGY MAJOR

Thirty-five hours including PSYC 001, 060 and 090, and at least one course from at least five of the following eight content areas: Developmental (078); Social (111 or 104); Learning (121 or 122); Assessment (127 or 131); History and Systems (128); Personality Theories (132); Physiological (129 or 135); and Abnormal (NURS 142, 143).

▲ PSYC 001. General Psychology 3 sem. 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. Offered every term.

PSYC 060. Psychological Measurements and Statistics 4 sem. 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. Offered every term. *Prereq: MATH 020 or equivalent and PSYC 001 or equivalent; Either three years of high school mathematics or MATH 020 or its equivalent.*

▲ PSYC 078. Introduction to Life-Span Developmental Psychology 3 sem. 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. Offered every term. *Prereq: PSYC 001 or equivalent.*

PSYC 090. Research Methods and Designs in Psychology 4 sem. hrs.

hrs. lab., 4 sem. 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. Offered every term. *Prereq: PSYC 001 or equivalent and PSYC 060.*

▲ PSYC 101. Developmental Psychology: Conception Through Adolescence 3 sem. 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. Offered annually. *Prereq: PSYC 001 or equivalent.*

▲ PSYC 103. Developmental Psychology 3: Adulthood and Aging 3 sem. 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. Offered annually. *Prereq: PSYC 001 or equivalent.*

PSYC 104. Industrial Psychology 3 sem. 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. Offered annually. *Prereq: PSYC 001 or equivalent.*

PSYC 107. The Psychology of the Exceptional Child 3 sem. 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. Offered annually. *Prereq: PSYC 101 or equivalent; or cons. of instr.*

▲ PSYC 111. Introductory Social Psychology 3 sem. 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. Offered every term. *Prereq: PSYC 001 or equivalent.*

▲ PSYC 112. The Psychology of Prejudice 3 sem. hrs.

An overview of theory and research on the psychological underpinnings of intergroup intolerance, with emphasis given to racism, sexism, and heterosexism. *Prereq: PSYC 001.*

▲ PSYC 114. Human Factors Engineering 3 sem. 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. Offered annually. *Prereq: Jr. stndg. and PSYC 001 or equivalent; or cons. of instr.*

PSYC 121. Learning and Behavior 3 sem. hrs.

A comprehensive survey of methods and findings of classical and operant conditioning. Some introduction to theories of learning. Offered annually. *Prereq: PSYC 001 or equivalent.*

PSYC 122. Cognition 3 sem. hrs.

A systematic survey of classical and contemporary research topics in human learning; information processing, concept formation, problem-solving, verbal and motor learning. Offered annually. *Prereq: PSYC 001 or equivalent.*

PSYC 127. Principles of Psychological Testing 3 sem. 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. Offered annually. *Prereq: PSYC 001 or equivalent and PSYC 060.*

PSYC 128. History and Systems of Psychology 3 sem. 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. Offered annually. *Prereq: PSYC 090; or Sr. stdng.*

PSYC 129. Sensory Processes and Perception 3 sem. hrs.

The physiological processes underlying the various sensory systems with special emphasis on visual and auditory sensory and perceptual phenomena. Offered annually. *Prereq: PSYC 001 or equivalent.*

PSYC 130. Motivation and Emotion 3 sem. hrs.

Theoretical and empirical concepts of motivation and emotion. How motivation affects the initiation, persistence or change, goal-directness, and termination of behavior. Why behavior varies in intensity, and how individuals differ in motivation. The cognitive, physiological, motivational, and social aspects of emotions. Offered annually. *Prereq: PSYC 001 or equivalent.*

PSYC 131. The Psychology of Individual Differences 3 sem. hrs.

Problems and methods in the study of human differences. Physical, mental, racial, social and cultural variability. Offered annually. *Prereq: PSYC 001 or equivalent and PSYC 060.*

▲ PSYC 132. Theories Of Personality 3 sem. 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. Offered every term. *Prereq: PSYC 001 or equivalent.*

PSYC 135. Biopsychology 3 sem. 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. Offered annually. *Prereq: PSYC 090; or cons. of instr.*

PSYC 136. Animal Behavior 3 sem. hrs.
Animal behavior, both in natural and experimental situations, emphasizing early experience, motivation, physiological mechanisms, adaptiveness and the evolution of behavior.

Offered occasionally. *Prereq: PSYC 001 or equivalent.*

▲ PSYC 137. Abnormal Psychology 3 sem. 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. Offered every term. *Prereq: PSYC 001 or equivalent.*

PSYC 138. Childhood Psychopathology 3 sem. 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. Offered annually. *Prereq: PSYC 101; or cons. of instr.*

PSYC 139. Introduction to Clinical Psychology 3 sem. 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. Offered occasionally. *Prereq: PSYC 132 and PSYC 137.*

PSYC 145. Psychology of Language 3 sem. hrs.

Survey of methods and results of research on language development and function; verbal behavior; language learning and bilingualism; speech perception; language disorders. Offered occasionally. *Prereq: PSYC 001.*

PSYC 157. Psychology of Marriage and Family 3 sem. 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. Offered occasionally. *Prereq: Sr. stdng. and PSYC 001.*

PSYC 160. Psychology of Religion 3 sem. hrs.

Empirical research and findings pertinent to religion and religious experiences; psychological theories regarding religion; religious practices and experiences, religious orientation and awareness. Offered occasionally. *Prereq: PSYC 001.*

▲ PSYC 165. Human Sexuality 3 sem. 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. Offered annually. *Prereq: PSYC 001 or equivalent; or cons. of instr.*

PSYC 166. Psychology of Gender Roles 3 sem. 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; implica-

tions of anthropological investigations for an understanding of sex role ascriptions; relationship between gender role and responses to sexuality; remedial education for personhood. Offered annually. *Prereq: PSYC 001 or equivalent.*

PSYC 170. The Psychology of Death and Dying 3 sem. 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. Offered annually. *Prereq: PSYC 001 or equivalent.*

PSYC 175. Health Psychology 3 sem. 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. Offered occasionally. *Prereq: PSYC 001.*

PSYC 180. The Psychology of Fantasy and Imagination 3 sem. 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. Offered annually. *Prereq: PSYC 001 or equivalent.*

PSYC 194. Field Experience in Psychology 3 sem. hrs.

Placement in an 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. Placement must be directed by a psychology faculty member. Accompanied by seminar, readings, and demonstrated knowledge of appropriate ethical principles. Offered annually. S/U grade assessment. *Prereq: Sr. stdng. and cons. of dept. ch.; S/U grade assessment.*

PSYC 195. Independent Study 1-3 sem. hrs.
Independent study and research under the direction of a faculty member. Offered every term. *Prereq: cons. of dept. ch.*

PSYC 196. Advanced Undergraduate Seminar 3 sem. 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. Offered annually. *Prereq: cons. of instr.*

PSYC 198. Selected Topics in Psychology 3 sem. hrs.

Contemporary theoretical and research trends in selected contemporary areas of psychology. Topics to be announced. Offered occasionally. *Prereq: cons. of instr.*

PSYC 199. Senior Thesis 3 sem. hrs.
Conduct empirical research involving an original research question under the direction of a psychology faculty adviser. Open to psychology majors. Offered every term. *Prereq:* 3 MU QPA and PSYC 090 and cons. of dept. ch.; or Sr. stdng. and 3 MU QPA and cons. of dept. ch.; Grade point average of at least 3.5 in Psychology. Maximum of six credits available for 199 alone or 195 and 199 combined.

RESERVE OFFICERS' TRAINING CORPS

Air Force Aerospace Studies (AFAS)

Chairperson and Professor: Copsey
Associate Professor: Fudge, Hasenstein
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 AFROTC Program see 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

AFAS 011, 012, 021, 022, 131, 132, 141 and 142; plus 051 taken each term; for a total of 16 credits. In addition the student must complete 6 credits to obtain breadth of knowledge and a basis for understanding Joint Military Doctrine. Political Science (choose 1): 128 Congress and the President or 129 National Security Policy. Military Science/Army (choose 1): 010 Intro to Military Science or 011 Intro to Military Leadership. Naval Science/Navy (choose 1): 009 Intro to Naval Science or 022 Seminar in Sea Power.

Note: The courses in Army and Navy may not be taken until completing the Air Force required field training (usually taken between sophomore and junior year).

AFAS 011. Foundations of the Air Force 1

1 sem. 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 AFAS051.

AFAS 012. Foundations of the Air Force 2

1 sem. hr.
Continuation of AFAS 011. Open to all students. Students pursuing an Air Force commission must register for AFAS 051.

AFAS 021. Evolution of the Air Force/Air and Space Power 1

1 sem. 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 AFAS051.

AFAS 022. Evolution of the Air Force/Air and Space Power 2

1 sem. hr.
Continuation of AFAS 021. Open to all students. Students pursuing an Air Force commission must register for AFAS 051.

AFAS 051. Leadership Laboratory

0 sem. 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.

AFAS 131. Air Force Leadership Studies 1

3 sem. 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 AFAS051.

AFAS 132. Air Force Leadership Studies 2

3 sem. hrs.
Continuation of AFAS 131. All students pursuing an Air Force commission must register for AFAS 051.

AFAS 141. National Security Affairs/Preparation for Active Duty 1

3 sem. hrs.
Examines the need for national security, analyzes the evolution and formulation of the American defense policy, strategy, and joint doctrine; investigates the methods for managing conflict; and overviews regional security, arms control, and terrorism. Special topics of interest focus on the military as a profession, officership, the military justice system, and current issues affecting military professionalism. Within this structure, continued emphasis is given to the refinement of communicative skills. Students pursuing Air Force commission must register for AFAS051.

AFAS 142. National Security Affairs/Preparation for Active Duty 2

3 sem. hrs.
Continuation of AFAS 141. All students pursuing Air Force commission must register for AFAS 051.

AFAS 193. Air Force Field Training

1-4 sem. hrs.
Off campus summer program offered at Tyndall Air Force Base (AFB), Panama City, Florida; Ellsworth AFB, Rapid City, South Dakota; and Lackland AFB, San Antonio, Texas. This course counts as completion of the General Military Course. This program is offered in lieu of AFAS011, 012, 021, and 022. The five-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. Offered only during the summer.

Prereq: cons. of dept. ch.; S/U grade assessment.

AFAS 195. Independent Study 1-3 sem. hrs.
Independent study of special topics in Aerospace Studies under faculty supervision. Topics selected by student/faculty conference. Offered every term. *Prereq:* cons. of dept. ch.

Military Science and Leadership (MISL)

Chairperson and Professor: Hartmayer
Assistant Professor: Meidl, Rudock, Stanton, Stehle
Lecturer: Cleary, Sarte

MINOR:

MISL 001-008, 010, 011, 018, 024, 025, 135, 136, 137, 138, 144, 146, 147, 148, and HIST 118. In addition, the student must complete one term of written communication and one term of computer literacy.

Note: For a general discussion of the Army Reserve Officer Training Corps Program see the section entitled Military Science and Leadership in the University section of this bulletin.

Note: The required history for senior AROTC students is HIST 118 or MISL 018, offered fall term.

Note: 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.

MISL 001. Physical Training Laboratory 1

1 sem. hr.
Goal-oriented, small unit approach to physical conditioning and military drill. The physical conditioning phase is conducted two times per week. Conditioning is oriented toward strength development, cardiorespiratory endurance, and flexibility. Physical development and the ability to master principles of small unit leadership are stressed. Cadet physical development is measured by the Army Physical Fitness Test, consisting of pushups, set-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. The Physical Training Laboratory is required for all cadets who are enrolled in Military Science courses. Non-Military Science students may

elect to take only the physical conditioning portion of the Laboratory. Offered fall term. Required of all MS I ROTC students.

MISL 003. Physical Training Laboratory
1 sem. hr.

Goal-oriented, small unit approach to physical conditioning and military drill. The physical conditioning phase is conducted two times per week. Conditioning is oriented toward strength development, cardiorespiratory endurance, and flexibility. Physical development and the ability to master principles of small unit leadership are stressed. Cadet physical development is measured by the Army Physical Fitness Test, consisting of pushups, set-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. The Physical Training Laboratory is required for all cadets who are enrolled in Military Science courses. Non-Military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered fall term.

MISL 004. Physical Training Laboratory
1 sem. hr.

Goal-oriented, small unit approach to physical conditioning and military drill. The physical conditioning phase is conducted two times per week. Conditioning is oriented toward strength development, cardiorespiratory endurance, and flexibility. Physical development and the ability to master principles of small unit leadership are stressed. Cadet physical development is measured by the Army Physical Fitness Test, consisting of pushups, set-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. The Physical Training Laboratory is required for all cadets who are enrolled in Military Science courses. Non-Military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered spring term.

MISL 005. Physical Training Laboratory
1 sem. hr.

Goal-oriented, small unit approach to physical conditioning and military drill. The physical conditioning phase is conducted two times per week. Conditioning is oriented toward strength development, cardiorespiratory endurance, and flexibility. Physical development and the ability to master principles of small unit leadership are stressed. Cadet physical development is measured by the Army Physical Fitness Test, consisting of pushups, set-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. The Physical Training Laboratory is required for all cadets who are enrolled in Military Science courses. Non-Military Science students may elect to take only the physical conditioning portion of the laboratory. Offered fall term.

MISL 006. Physical Training Laboratory
1 sem. hr.

Goal-oriented, small unit approach to physical conditioning and military drill. The physical conditioning phase is conducted two times per week. Conditioning is oriented toward strength development, cardiorespiratory endurance, and

flexibility. Physical development and the ability to master principles of small unit leadership are stressed. Cadet physical development is measured by the Army Physical Fitness Test, consisting of pushups, set-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. The Physical Training Laboratory is required for all cadets who are enrolled in Military Science courses. Non-Military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered spring term.

MISL 007. Physical Training Laboratory
1 sem. hr.

Goal-oriented, small unit approach to physical conditioning and military drill. The physical conditioning phase is conducted two times per week. Conditioning is oriented toward strength development, cardiorespiratory endurance, and flexibility. Physical development and the ability to master principles of small unit leadership are stressed. Cadet physical development is measured by the Army Physical Fitness Test, consisting of pushups, set-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. The Physical Training Laboratory is required for all cadets who are enrolled in Military Science courses. Non-military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered fall term.

MISL 008. Physical Training Laboratory
1 sem. hr.

Goal-oriented, small unit approach to physical conditioning and military drill. The physical conditioning phase is conducted two times per week. Conditioning is oriented toward strength development, cardiorespiratory endurance, and flexibility. Physical development and the ability to master principles of small unit leadership are stressed. Cadet physical development is measured by the Army Physical Fitness Test, consisting of pushups, set-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. The Physical Training Laboratory is required for all cadets who are enrolled in Military Science courses. Non-Military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered spring term.

MISL 010. Introduction to Military Science
1 sem. hr.

Introduction to the national security structure with emphasis on today's Army. Role of the Reserve Officers' Training Corps in providing leaders for the Army. Roles of active and reserve components to include basic Army organizations, missions and chain of command. Customs, courtesies, and traditions of the U.S. Army. Introduction to branches of the Army, their missions and relationships to students' academic majors. Offered fall term.

MISL 011. Introduction to Military Leadership 1 sem. hr.

Introduction to the principles of leadership and their application to the military. An in-depth

examination of the concept of leadership, the character of a leader and the knowledge he/she must possess. A practical application of basic individual skills necessary for small unit leaders. Students learn fundamentals in leadership, military map reading, first aid, written and oral communications and physical fitness. Offered spring term.

MISL 024. Basic Military Skills 1 sem. hr.
Practical application of basic individual skills necessary for all future military leaders: proper movement techniques, land navigation, and targeting with various weapons systems. Students will prepare and issue operations orders and, by assuming positions of authority, develop leadership abilities. Offered fall term. *Prereq: MISL 010 and MISL 011.*

MISL 025. Military Skills 2 sem. hrs.
Practical application of basic individual skills necessary for small unit leaders. Students learn fundamentals in map reading, seven life saving first aid steps. Students will conduct briefings and participate in practical exercises as a small unit leader. Offered spring term. *Prereq: MISL 010 and MISL 011; or cons. of instr.*

MISL 135. Applied Leadership 1 2 sem. hrs.
Advanced study and application of the principles of leadership, management, team building, and motivation theory. Cadets must develop and demonstrate skills in planning, decision making and presentation techniques in a series of practical opportunities to lead small groups. Students identify training requirements, coordinate resources and conduct training. Experiential learning through case studies, simulations and exercises. Offered fall term. *Prereq: MISL 137 which may be taken concurrently and MISL 010 and MISL 011 and MISL 024 and MISL 025 or cons. of instr.*

MISL 136. Applied Leadership 2 2 sem. hrs.
Study of organization, composition and mission of operational elements. Cadets must apply the principles of offensive and defensive operations with emphasis on squad and platoon level. Topics include troop-leading procedures, tactical orders, movement to contact, combat patrolling, reconnaissance and tactical intelligence and tactical leadership. Offered spring term. *Prereq: MISL 135 and MISL 138 which may be taken concurrently.*

MISL 137. Applied Leadership Laboratory 1
1 sem. 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. Offered fall term. *Prereq: MISL 135 which may be taken concurrently.*

MISL 138. Applied Leadership Laboratory 2
1 sem. 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 136 which may be taken concurrently.*

MISL 144. Organizational Leadership
2 sem. hrs.

Introduction to planning, organizing and directing military staff and command activities. Study of logistics and maintenance management at the small unit level. Description of personnel management and training, and training management. Thorough discussion of practical situations facing junior officers upon entering military service. Offered spring term. *Prereq: MISL 135 and MISL 136 and MISL 148 which may be taken concurrently.*

MISL 146. Military Law, Professionalism and Ethics 2 sem. hrs.

Introduction to the Uniform Code of Military Justice, the Manual for Courts Martial, personal affairs/legal assistance and international law. Discussion of the Army officer's responsibilities focusing on the requirement to develop awareness of and sensitivity to ethical issues. Real world case studies emphasize the pragmatic and ethical decision making process. Offered fall term. *Prereq: MISL 135 and MISL 136 and MISL 147 which may be taken concurrently.*

MISL 147. Advanced Leadership Laboratory 1 0 sem. 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. Offered fall term. *Prereq: MISL 146 which may be taken concurrently.*

MISL 148. Advanced Leadership Laboratory 2 0 sem. 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. Offered spring term. *Prereq: MISL 144 which may be taken concurrently.*

MISL 193. Military Science Practicum
6 sem. 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 010, 011, 024, and 025. Offered only during the summer. *Prereq: cons. of dept. ch.*

MISL 195. Independent Study 1-3 sem. hrs.
Independent study of special topics in Military Science under faculty supervision. Topics selected by student/faculty conference. Offered every term. *Prereq: cons. of dept. ch.*

Naval Science (NASC)

Chairperson and Professor: Wilde
Associate Professor: Henn
Assistant Professor: Krida, Mirkhani, Reinbold, Rossow

Note: NROTC students should note that most programs will probably entail more than the 128 hours normally required for graduation.

MINOR:

A minimum of twenty-one hours of Naval Science courses from the following: NASC 009, 022, 142, 151, 152, 162, 185, 186 and/or 195. Marine Option students substitute NASC 161, 181, and 193 for 142, 151, 152 and 162.

Additional requirements: All Navy Option scholarship students must complete two terms of calculus by the end of the sophomore year: (MATH 080 and 081). Core and major requirements may dictate what combination of calculus courses must be taken. In addition, Navy Option scholarship students must complete two terms of calculus-based physics (PHYS 003 and 004) by the end of the junior year. Navy Option scholarship students must also complete HIST 118 or POSC 129, one term of computer science, and two terms of English. To be competitive for selection for a scholarship, non-scholarship students should plan on completing two terms of calculus (MATH 080 and 081) by the end of the freshman year and two terms of physics (PHYS 003 and 004) by the end of the sophomore year. For specific details, contact the Professor of Naval Science.

NASC 001. Drill and Information Briefing
0 sem. 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, national security and sailing. 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. Offered every term. Required of all NROTC students.

NASC 009. Introduction to Naval Science
2 sem. 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. Offered fall term. Non-NROTC students require consent of Department Chair.

▲ NASC 022. Seminar in Sea Power and Maritime Affairs 3 sem. hrs.

Influence of U.S. Sea Power and Maritime Affairs on international economic and political relationships. Classroom discussions based on independent reading. Offered spring term. Non-NROTC students require consent of department chair.

NASC 142. Naval Ship Systems 1 3 sem. hrs.
Ship design, construction, types and missions. Ship compartmentation, interior communications, propulsion, auxiliary power and ship control systems. Elements of ship design for safe operation. Ship stability characteristics. Offered spring term. Non-NROTC students require consent of department chair.

NASC 151. Navigation and Naval Operations 1 3 sem. 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. Offered fall term. Non-NROTC students require consent of department chair.

NASC 152. Navigation and Naval Operations 2 3 sem. 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. Offered spring term. *Prereq: NASC 151; Non-NROTC students require consent of department chair.*

NASC 161. Evolution of the Art of War
3 sem. hrs.

Military principles and concepts throughout history. Tactical and strategic applications in selected engagements. Offered alternate fall terms. Non-NROTC students require consent of Department Chair.

NASC 162. Naval Ship Systems 2 3 sem. 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. Offered fall term. *Prereq: NASC 142; Non-NROTC students require consent of department chair.*

NASC 181. Amphibious Warfare 3 sem. hrs.
Application of amphibious doctrine to battles of World War II and the Korean conflict. Offered alternate fall terms. Non-NROTC students require consent of department chair.

NASC 185. Leadership and Management
3 sem. hrs.

Stress on experiential approach to leadership and management with military emphasis. Motivation and communication theory and practice. Group dynamics decision making techniques. Lines of control and organizational structure. Case studies, experiential exercises and situational problems will be used. Offered fall term. Non-NROTC students require consent of department chair.

NASC 186. Leadership and Ethics
3 sem. hrs.

Applied techniques and theories learned in NASC 185. Practical application of sound leadership and ethics to Navy situations. Counseling, discipline, and administration are explored. Offered spring term. *Prereq: NASC 185; Non-NROTC students require consent of department chair.*

NASC 193. Practicum in U.S. Marine Corps Leadership and Management
4 sem. 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. Junior standing in USMC option. S/U grade assessment only.

NASC 195. Independent Study 1-3 sem. hrs.
Independent study of special topics in Military Science under faculty supervision. Topics selected by student/faculty conference. Offered every term. *Prereq: cons. of dept. ch.*

SOCIAL AND CULTURAL SCIENCES

Chairperson and Professor: Holstein
Professor: Buckholdt, Miller, Moberg (*Emeritus*)
Associate Professor: Coles, Farkas, R. Jones, Peterson, Sullivan, Zevitz
Assistant Professor: Archbold, Doane, Owens, Shrift, Stalal, Stichman, Stroshine
Adjunct Professor and Director of the Archaeological Resource Center: Overstreet
Adjunct Assistant Professor: Crane, Johnstone

The Department of Social and Cultural Sciences is a multidisciplinary department. The department offers students the opportunity to expand their educational horizons by pursuing two majors within the department. Identified courses within the Department of Social and Cultural Sciences may be counted toward the completion of both majors. Consult your faculty adviser and handbook for details.

Anthropology (ANTH)

Courses are grouped according to the main streams of emphasis: Linguistics is covered by ANTH 109 which is grouped with courses in method and theory; 120–129 covers cultural anthropology; 140–149 represents archaeology; and 150–159 lists physical anthropology.

MAJOR:

Thirty hours, including ANTH 001, 101, 105, 106, 109, 191, and 12 additional hours in upper division courses. Up to two of the following courses will count as electives in the ANTH major: CRLS 165, SOWJ 182, SOCI 129 (Language and Culture), 132, 133 and 134.

MINOR:

Eighteen hours, including ANTH 001.

TEACHING MAJOR:

Thirty-four hours, including ANTH 001, 002, 101, 105, 109, 191 and at least one course in the Peoples and Cultures series (ANTH 121–128). Up to two of the following courses will count as electives in the ANTH major: CRLS 165, SOWJ 182, SOCI 129 (Language and Culture), and SOCI 134.

Students should see the department adviser for middle school/secondary teaching majors or minors to consult about the appropriate sequence of courses. It is also important that prospective teachers study carefully the School of Education section of this bulletin regarding university and state requirements (in addition to department requirements) for teacher certification.

Please refer to "Core Curriculum Requirements for Education Majors" under "Graduation Requirements" in the College of Arts and Sciences section of this bulletin.

TEACHING MINOR:

Twenty-two hours, including ANTH 001, 002, 101, 105, 109, 121, with a minimum quality point average of 2.700 in Anthropology.

PREREQUISITES:

The designation "Recommended prerequisite" that follows most courses has two implications: (1) The instructor will teach the course as if all students enrolled had completed satisfactory work in the prerequisite. (2) Any student who seeks a challenging intellectual experience, particularly an advanced major in some field other than anthropology, may enroll without the prerequisites, but in so doing assumes full responsibility to obtain independently an adequate background which is the equivalent of the listed prerequisites.

▲ ANTH 001. Introductory Anthropology

3 sem. 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. Offered every term.

ANTH 002. Introduction to Biological Anthropology

3 sem. 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 106. Credit will be given toward fulfillment of the Natural Science requirement in the Arts and Sciences College Curriculum.

ANTH 101. Cultural Anthropology

3 sem. 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. Offered annually.

ANTH 105. Archaeology and Prehistoric Cultures

3 sem. 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. Offered annually.

ANTH 106. Human Evolutionary Process

3 sem. 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. Cannot be taken for Arts and Sciences Natural Science credit by students who have taken ANTH 002. Credit will be given toward fulfillment of the Natural Science requirement in the Arts and Sciences College Curriculum.

ment of the Natural Science requirement in the Arts and Sciences College Curriculum.

ANTH 109. Language and Culture 3 sem. hrs.
The role of language in human life. Comparative linguistic analysis. Interdependence of language and culture. Offered annually.

ANTH 110. Human Geography 3 sem. 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. Offered annually. Fulfills geography requirement for social studies teaching certification.

ANTH 111. Economic Anthropology

3 sem. 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. Offered occasionally. ANTH 001 recommended.

ANTH 112. Anthropology of Religion

3 sem. hrs.

Cross-cultural perspective on religion in human societies. Examples from Western and non-Western societies, rituals, healing, revitalization, role of religion. Offered occasionally.

ANTH 116. Culture Change and Development

3 sem. 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. Offered occasionally. Recommended prerequisites: ANTH 001 and ANTH 101

ANTH 121. Native Peoples of North America

3 sem. 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. Offered alternate years.

ANTH 125. People and Cultures of the Middle East

3 sem. 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. Offered occasionally. Recommended prerequisite: ANTH 001 or ANTH 101

ANTH 126. European Cultures and Peoples

3 sem. hrs.

Cultural traditions and contemporary ethnic issues of European nations; heritage of ethnic European descendants in the United States. Offered occasionally.

ANTH 129. Urban Anthropology 3 sem. 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. Offered occasionally. *Recommended prereq:* ANTH 001 or ANTH 101.

ANTH 130. Women and Men in Cross-Cultural Perspective 3 sem. 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. Offered annually.

ANTH 141. Prehistory of North America 3 sem. hrs.

Archaeology of North America, including Mexico, from earliest migrations to European contact; background for historic Indian peoples. Archaeological methods and controversies. Offered occasionally. *Prereq:* ANTH 105 *recommended*

ANTH 142. Prehistory of South America 3 sem. 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. Offered occasionally. ANTH 105 recommended.

ANTH 144. The Rise of Agriculture 3 sem. 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. Offered alternate years. *Prereq:* ANTH 105; or *cons. of instr.*

ANTH 145. Archaeology of Complex Societies 3 sem. hrs.

Patterns of processes involved in the development of complex social systems. Archaeological records of state formation and urbanization in Egypt, Mesopotamia, and Mesoamerica. Offered alternate years. *Prereq:* ANTH 105.

ANTH 146. Archaeology in Action: Ethnographic and Experimental Approaches 3 sem. hrs.

This course introduces students to the theories and methods of ethnoarchaeology; that is, 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. Offered alternate years. *Recommended prerequisite:* ANTH 105

ANTH 147. Bioarchaeology: Linking Bones and Behavior 3 sem. 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. Offered alternate years. *Prereq:* ANTH 105; or *cons. of instr.*

ANTH 148. Archaeological Fieldwork 3 sem. 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. Offered summer. *Prereq:* ANTH 105 and SOCI 060 or equivalent.

ANTH 151. Human Osteology and Odontology 3 sem. 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. Offered alternate years. *Prereq:* ANTH 106.

ANTH 152. Origins of the Human Species 3 sem. 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. Offered alternate years. *Prereq:* ANTH 106.

ANTH 153. Demography 3 sem. hrs.

Methods of analyzing population structure in small-scale societies, including studies of mortality and fertility patterns in bio-social and environmental contexts. Offered occasionally. *Prereq:* ANTH 001.

ANTH 155. Sex and Evolution 3 sem. 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. Offered occasionally. *Prereq:* ANTH 106.

ANTH 191. Development of Anthropological Theory 3 sem. 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. Offered annually. *Prereq:* Sr. stndg; Twelve hours of course work in Anthropology.

ANTH 193. Internship in Anthropology 3 sem. hrs.

Supervised placement for pre-professional experience in applying anthropological concepts, principles, and methods in a museum, school, hospital, business, or other appropriate institutional setting. A minimum of 8 hours per week in the agency. Mid-term and final reports summarizing activities and integrating experiences with relevant anthropological literature. Offered every term. *Prereq:* Jr. stndg. and ANTH 001 and *cons. of instr.*; 9 credits in Anthropology, including ANTH 001 and one or more of the following: ANTH 101, 105, 106, 109; Q.P.A. of 3.0 in ANTH courses.

ANTH 195. Independent Study 1-3 sem. hrs. Supervised study of a specific area or topic in anthropology. Offered every term including summer. *Prereq:* *cons. of instr. and cons. of dept. ch.*

ANTH 196. Seminar in Anthropology 3 sem. hrs.

Exploration of selected problems in Anthropology through directed student research and group discussion. Variable topics. Offered

occasionally. *Prereq:* Twelve hours of course work in Anthropology.

ANTH 198. Special Topics in Anthropology 3 sem. hrs.

The special topics of 198 will be designated in the *Timetable of Classes*. Offered occasionally. May be taken a maximum of two times.

ANTH 199. Senior Thesis 1-3 sem. hrs.

For majors in Anthropology. Research project and paper prepared under faculty supervision. Strongly recommended for students planning to enter graduate programs. Offered every term. *Prereq:* Sr. stndg. and *cons. of instr. and cons. of dept. ch.*

Criminology and Law Studies (CRLS)

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 the Criminology and Law Studies Program are taught by faculty from both the College of Arts and Sciences and criminal justice practitioners.

MAJOR:

Thirty hours, including CRLS 051, 104 (or SOCI 104), 156, 157 or 159, 186, and 187, plus twelve hours selected from other CRLS courses. Up to two of the following courses will count as electives in the CRLS major: SOCI 153, SOCI 154 and SOCI 159.

Majors must fulfill half of their core curriculum mathematics-logic-computer requirement with SOCI 060 (Social Statistics).

Students majoring in Criminology and Law Studies may complete a second major in Sociology by taking the required courses for the Sociology major plus 5 elective courses. Up to two courses from the following list may be counted for credit towards both the CRLS and SOCI majors: CRLS 152, CRLS 155, CRLS 167, CRLS 168, SOCI 104, SOCI 153, SOCI 154, SOCI 159. A total of 54 credit hours from CRLS and SOCI is required.

Students majoring in Criminology and Law Studies may complete a second major in Social Welfare and Justice by taking the required courses for the Social Welfare and Justice major plus eighteen hours of elective credits. Up to two courses from the following list may be counted for credit towards both the SOWJ and CRLS majors: CRLS 152, CRLS 155, CRLS 156, CRLS 158, CRLS 161, CRLS 163, CRLS 165, CRLS 166, CRLS 167, CRLS 168, CRLS 186. Students may meet the research methods requirements for both majors by taking either CRLS 104 or SOCI 104. A total 54 credit hours from CRLS and SOWJ classes is required.

MINOR:

Eighteen hours, including CRLS 051 and fifteen hours of electives in CRLS courses (with the exception of 193).

▲ CRLS 051. Introduction to Criminology
3 sem. 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. Offered every term.

CRLS 083. Introduction to the Law
3 sem. 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. Offered occasionally.

CRLS 104. Methods of Criminological Research 3 sem. 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. Offered every term. *Prereq: SOCI 060 or equivalent; or cons. of instr.*

CRLS 133. Constitutional Law 3 sem. hrs.
Development of American constitutional law in the areas of judicial power, separation of powers, the presidency, state and national regulation of commerce, the taxing and spending power, and the rise and decline of due-process property rights. Offered occasionally. *Prereq: POSC 020; or Jr. stndg. Same as POSC 133; May be counted toward CRLS major course requirements.*

CRLS 151. History and Philosophy of Crime and Punishment 3 sem. 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. stndg. and PHIL 050; Same as HIST 151 and PHIL 151. May be counted toward the core curriculum requirement in either Philosophy or Social-behavioral Science.*

CRLS 152. Juvenile Delinquency/Juvenile Justice 3 sem. 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. Offered occasionally.

CRLS 155. Criminological Theory 3 sem. 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. Offered occasionally.

CRLS 156. Corrections: Prisons, Probation, and Parole 3 sem. 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. Offered every term. *Prereq: CRLS 051.*

CRLS 157. Police and Society 3 sem. 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. Offered every term. *Prereq: CRLS 051.*

CRLS 158. Victimology 3 sem. 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. Offered occasionally.

CRLS 159. Police Organization and Administration 3 sem. 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. Offered occasionally.

CRLS 160. Ultimate Penalties in the Criminal Justice System 3 sem. 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. Offered occasionally.

CRLS 162. White Collar Crime 3 sem. 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. Offered occasionally.

CRLS 163. Criminal Violence in America
3 sem. 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. Offered occasionally.

CRLS 164. Organized Crime 3 sem. 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. Offered occasionally.

CRLS 165. Comparative Justice Systems
3 sem. 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. Offered occasionally.

CRLS 166. Clinical Criminology 3 sem. 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. Offered occasionally.

▲ CRLS 167. Women, Crime, and Criminal Justice 3 sem. 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. Offered occasionally.

CRLS 168. Family Violence and Public Intervention 3 sem. 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. Offered annually. Same as SOWO 168. SOWO majors register for SOWO 168.

CRLS 181. Ethics in Criminal Justice
3 sem. 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. Offered occasionally. *Prereq: CRLS 051.*

CRLS 182. Criminal Court Process
3 sem. hrs.

Consideration of the criminal adjudication process, with emphasis on the organization of discretion. Topics include bail setting, prosecutorial and defense decision-making, plea bargaining, trial operations, sentencing and post-conviction remedies. Offered annually.

CRLS 185. Financial Crime Investigation

3 sem. 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 recordkeeping, accounting, interviewing techniques, and law and evidence as they relate to financial investigations. Offered occasionally.

CRLS 186. Criminal Law 3 sem. hrs.

Substantive law crimes; the theory, sources and purposes of criminal law; definition and classification of crimes; legal elements of crimes; meaning of criminal responsibility; defenses and mitigating circumstances. Offered annually. *Prereq: CRLS 051.*

CRLS 187. Criminal Procedure 3 sem. hrs.

Criminal procedure; arrest, search and seizure; interrogation; court procedure; constitutional limitations on state and federal rules of criminal procedure. Offered annually. *Prereq: CRLS 051.*

CRLS 188. Criminal Investigation 3 sem. hrs.

Fundamental principles and procedures of criminal investigation. Crime scene search and recording. Collection and preservation of physical evidence. Obtaining testimonial evidence. Offered occasionally.

CRLS 189. Evidence 3 sem. 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. Offered occasionally.

CRLS 193. Internship in Criminology and Law Studies 3 or 6 sem. hrs.

Field experience in a federal, state, county or municipal criminal justice or administrative law agency for the purpose of furthering the student's integration of theory and practice. Placement and participation in law enforcement agencies, correctional settings, judiciary and court related offices, or legal research bureaus. Based upon agency agreement, minimum of either eight (3 credits) or sixteen (6 credits) field hours per week under direct supervision of instructor and agency personnel. Offered every term. Only three credit hours may be counted toward the 30 credit hours required for the major. *Prereq: Sr. stndg. and Consent Required; Consent of internship coordinator. Prerequisite is a cumulative quality point average of 2.500 in all degree coursework, 18 hours of course work in CRLS major. Limited enrollment. S/U grade assessment.*

CRLS 195. Independent Study 1-3 sem. hrs.

Readings and research on a particular problem or subject of interest to the student. Offered every term. *Prereq: cons. of instr. and cons. of dept. ch.*

CRLS 198. Special Topics in Criminology and Law 3 sem. hrs.

Lectures and discussions in a broad area which, because of its topicality, is not the subject of a regular course. The special topics will be designated in the *Timetable of Classes*. May be taken a maximum of two times. Offered occasionally.

Social Welfare and Justice (SOWJ)

The Social Welfare and Justice major is designed to provide students with the knowledge and experiences needed in pursuing successful careers in social services, victim services and social welfare policy. Students who complete this major will be familiar with the area of victim services as well as the roles, values, and history of the social work profession. They will be knowledgeable about social welfare policies and problems, and will develop the analytic skills needed to evaluate and reform social welfare policies and services. Graduates of the major will have the skills needed to work with culturally diverse groups, and will be familiar with the justice issues that affect these groups. Students taking the major will develop skills in political advocacy and social change, skills that will make them leaders in creating positive justice outcomes.

Students may take a general major in Social Welfare and Justice or they may concentrate their studies in one of two areas: Pre-MSW (Masters in Social Work) Concentration or Victim Services Concentration

MAJOR:

Requirements: Thirty hours including SOWJ 080, 182, 184, SOCI 104 or CRLS 104 (students also majoring in psychology may take PSYC 090 in place of SOCI 104 OR CRLS 104), plus eighteen hours of electives. Majors must fulfill part of their core curriculum math-logic-computer requirement by taking SOCI 060 (students also majoring in psychology may take PSYC 060 in place of SOCI 060), and must fulfill part of their core curriculum philosophy requirement by taking PHIL 105.

Electives: All courses designated as SOWJ classes, plus ANTH 116, 121, 130; CRLS 152, 155, 156, 158, 161, 163, 166, 167, 168, 181, 198 (Victim Services and Policies); SOCI 121, 125, 128, 132, 133, 153, 162, 163, 164, 165, 166, 186.

The **Pre-MSW Concentration** addresses the goals of the Social Welfare and Justice major. While this concentration does not guarantee admission into graduate school, the concentration provides students with the background knowledge and skills needed to pursue graduate study leading to the Masters in Social Work degree. The concentration also provides students with the knowledge and skills needed to obtain and be successful at entry-level positions in the social service agencies.

Requirements: Thirty hours including SOWJ 080, 182, 184, 185, 187, 189, 190, SOCI 104 or CRLS 104 (students also majoring in psychology may take PSYC 090 in place of SOCI 104 OR CRLS 104), plus six hours of electives. Majors must fulfill part of their core curriculum math-logic-computer requirement by taking SOCI 060 (students also majoring in psychology may take PSYC 060 in place of SOCI 060), and must fulfill part of their core curriculum philosophy requirement by taking PHIL 105.

Electives: All courses designated as SOWJ classes, plus ANTH 116, 121, 130; CRLS 152, 155, 156, 158, 163, 166, 167, 168, 181, 198 (Victim Services and Policies); SOCI 121, 125, 128, 153, 162, 163, 164, 165, 166, 186.

The Victim Services Concentration

addresses the goals of the Social Welfare and Justice major. It is also designed to provide students with a fundamental understanding of the issues and concerns of crime victims and knowledge about laws, policies and practices that impact crime victims. Graduates of the Victim Services Concentration within the Social Welfare and Justice major will also possess the practical skills needed to assist and advocate for crime victims.

Requirements: Thirty hours including SOWJ 080, 182, 184, 187, 189, CRLS 158, 198 (Victim Services and Policies), SOCI 104 or CRLS 104 (students also majoring in psychology may take PSYC 090 in place of SOCI 104 OR CRLS 104), plus eighteen hours of electives. Majors must fulfill part of their core curriculum Math-Logic-Computer requirement by taking SOCI 060 (students also majoring in psychology may take PSYC 060 in place of SOCI 060), and must fulfill part of their core curriculum philosophy requirement by taking PHIL 105.

Electives: CRLS 152, 155, 156, 163, 167, 168; SOCI 121, 165, 166.

Students majoring in Social Welfare and Justice may complete a second major in Criminology and Law Studies by taking the required courses for the Criminology and Law Studies major plus 16 credit hours of elective courses. Up to two courses from the following list may be counted for credit towards both the SOWJ and CRLS majors: CRLS 152, CRLS 155, CRLS 156, CRLS 158, CRLS 161, CRLS 163, CRLS 165, CRLS 166, CRLS 167, CRLS 168, CRLS 186. Students may meet the research methods requirements for both majors by taking either CRLS 104 or SOCI 104. A total 54 credit hours from CRLS and SOWJ classes is required.

Students majoring in Social Welfare and Justice may complete a second major in Sociology by taking the required courses for the Sociology major plus 15 credit hours of elective courses. Twenty-one hours must be taken in Sociology classes numbered 100 or above. Up to two courses from the following list may be counted for credit towards both the SOWJ and SOCI majors: SOCI 121, SOCI 125, SOCI 128, SOCI 132, SOCI 133, SOCI 153, SOCI 159, SOCI 162, SOCI 163, SOCI 164, SOCI 166, SOCI 186. Students may meet the research methods requirements for both majors by taking either CRLS 104 or SOCI 104. A total 54 credit hours from SOCI and SOWJ classes is required.

MINOR:

Eighteen hours, including SOWJ 080, 182 and 184, plus either SOCI 104 or CRLS 104, and 6 hours of elective courses.

▲ SOWJ 080. Introduction to Social Welfare and Justice 3 sem. hrs.

Introduction to social work, social welfare, victim services and justice, exploring the ethics, values and goals of social welfare and justice. Examination of historical and contemporary social problems and their relationship to social welfare policies, social work and justice. Observational assignments and service learning link the experiential to the theoretical.

SOWJ 170. Family Counseling and Therapy
3 sem. 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. Offered occasionally.

SOWJ 182. Social Welfare Policy and Programs 3 sem. hrs.

Examination of historical, political, and economic influences in the development of social welfare policy. The policy making process, and appropriate professional roles for human service workers. Discusses how social work values and societal priorities affect the formulation and evaluation of social welfare policies and services. Description and analysis of contemporary, social welfare programs, public and private.

SOWJ 184. Practice Skills with Individuals, Families and Groups 3 sem. hrs.

Introduction to practice skills with individuals, families and groups. Students begin to develop skills in supportive listening, observing, nonverbal communication, developing positive relationships, interviewing, establishing, and maintaining professional relationships, termination, and evaluation. Specific considerations for groups and families are discussed. Experiential learning is linked to service learning and other methods. *Prereq: SOWJ 080.*

SOWJ 185. Human Behavior in the Social Environment 3 sem. hrs.

Provides a systems framework for understanding and assessing human behavior at the individual, group, family, organizational and community levels. The student learns how the various systems affect one another and why consideration of all systems and their interrelationships is necessary for effective human services practice. Special attention is paid to cultural diversity, social justice issues, and populations at risk.

SOWJ 186. Advanced Practice 3 sem. hrs.
Continuation of the study of generalist practice theory. 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 where appropriate and terminating. Working with families and groups is further examined. *Prereq: SOWJ 080.*

SOWJ 187. Internship: Seminar in Social Welfare and Justice 3-4 sem. hrs.

Participation in a community social service agency for 10-20 hours per week throughout the semester with professional supervision. Settings include hospitals, nursing homes, correctional agencies, neighborhood centers, schools, counseling services, consumer advocacy agencies and others. Includes 2 hour weekly seminar. *Prereq: SOWJ Major; S/U grade assessment.*

SOWJ 189. Advocacy and Social Change Theory and Practice 3 sem. 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 190. Advanced Internship and Seminar in Social Welfare and Justice
3-4 sem. hrs.

Continuation of the internship experience. 10-20 hours per week of supervised instruction at the same agency of previous semester. Includes 2 hour weekly seminar. *Prereq: SOWJ Major and SOWJ 187; S/U grade assessment*

SOWJ 195. Independent Study 1-3 sem. hrs.
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 quality point average of 2.5 in SOWJ courses is a prerequisite of this course.*

SOWJ 196. Ethics in Social Welfare and Justice 3 sem. hrs.

An in depth consideration of ethical issues in social welfare, justice and values; their relationship to social work as a profession and social welfare policy. Exploration of value dilemmas and other frustrations which may confront the professional human services worker working in organizations, and how they may relate to the development of professional identity. The role of professional human services organization.

SOWJ 198. Selected Topics in Social Welfare and Justice 3 sem. hrs.

A lecture course on special areas and themes. Specific topics will be designated in the *Timetable of Classes*. Offered occasionally.

SOWJ 199. Senior Thesis 1-3 sem. hrs.
SOWJ majors with a quality point average of 3.000 or higher may write a thesis under the direction of an adviser. Offered every term. *Prereq: Sr. stndg. and 3 MU QPA and cons. of dept. ch. and Consent Required; Consent of Social Work Advisor is a prerequisite of this course.*

Sociology (SOCI)

MAJOR:

Thirty hours, including SOCI 001, 060, 100, 104 (or CRLS 104), 196. Twenty-one hours must be taken from classes numbered 100 or above. SOCI 196 will ordinarily be taken in the final year of the major or after 21 Sociology credit hours have been earned. An elementary course in statistics from another department may substitute for SOCI 060 with the approval of the Department Chair, but 30 hours in Sociology will still be required. SOCI 060 may be used simultaneously to satisfy the Sociology requirement and to contribute toward the six hour Arts and Sciences core requirement for mathematics-logic-computer. Up to two of the following courses will count as electives in the

SOCI major: ANTH 101, CRLS 152, CRLS 155, CRLS 167, CRLS 168 and SOWJ 185.

Students majoring in Sociology may complete a second major in Criminology and Law Studies by taking the required courses for the Criminology and Law Studies major plus 4 elective courses. Up to two courses from the following list may be counted for credit towards both the CRLS and SOCI majors: CRLS 152, CRLS 155, CRLS 167, CRLS 168, SOCI 104, SOCI 153, SOCI 154, SOCI 159. A total of 54 credit hours from SOCI and CRLS is required.

Students majoring in Sociology may complete a second major in Social Welfare and Justice by taking the required courses for the Social Welfare and Justice major plus 18 credit hours of elective courses. Up to two courses from the following list may be counted for credit towards both the SOWJ and SOCI majors: SOCI 121, SOCI 125, SOCI 128, SOCI 132, SOCI 133, SOCI 153, SOCI 159, SOCI 162, SOCI 163, SOCI 164, SOCI 166, SOCI 186. Students may meet the research methods requirements for both majors by taking either CRLS 104 or SOCI 104. A total 54 credit hours from SOCI and SOWJ classes is required.

MINOR:

Eighteen credit hours, including SOCI 001 and either 100 or 104 (preferably both).

TEACHING MAJOR:

Thirty-four hours, including ANTH 001, SOCI 001, 060, 100, 104, 196. Twenty-one hours must be taken from classes numbered 100 or above. SOCI 196 will ordinarily be taken in the final year of the major or after 21 Sociology credit hours have been earned. An elementary course in statistics from another department may substitute for SOCI 060 with the approval of the Department Chair, but 30 hours in Sociology will still be required. SOCI 060 may be used simultaneously to satisfy the Sociology requirement and to contribute toward the six hour Arts and Sciences core requirement for mathematics-logic-computer. Up to two of the following courses will count as electives in the SOCI major: ANTH 101, CRLS 152, CRLS 155, CRLS 167, CRLS 168 and SOWJ 185.

Students should see the department adviser for middle school/secondary teaching majors and minors to consult about the appropriate sequence of courses. It is also important that prospective teachers study carefully the School of Education section of this bulletin regarding university and state requirements (in addition to department requirements) for teacher certification.

Please refer to "Core Curriculum Requirements for Education Majors" under "Graduation Requirements" in the College of Arts and Sciences section of this bulletin.

TEACHING MINOR:

Twenty-two hours, including ANTH 001, SOCI 001, 100, 104, and 10 additional hours in sociology and anthropology, of which not more than three may be in anthropology.

PREREQUISITES:

The department recommends SOCI 001 — Principles of Sociology — as the beginning course in Sociology. Most upper-division courses have a recommended prerequisite of SOCI 001. 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 001 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.

▲ SOCI 001. Principles of Sociology
3 sem. 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. Offered every term.

▲ SOCI 021. The Family 3 sem. 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. Offered every term.

▲ SOCI 060. Social Statistics 3 sem. hrs.
Logic and application of statistical reasoning in sociological research. 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. Not open to students who have taken another elementary statistics course. Offered annually. *Prereq: SOCI Major and MATH 010 or equivalent; or SOWO Major and MATH 010 or equivalent; or CRLS Major and MATH 010 or equivalent; or MATH 010 or equivalent and cons. of instr.; Three years of high school preparatory mathematics can substitute for MATH 010.*

SOCI 100. Sociological Theory 3 sem. 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 104. Offered annually. *Prereq: SOCI 001; or cons. of instr.*

SOCI 104. Methods of Social Research
3 sem. 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 project. Contribution of alternative methods of theory building, program evaluation, policy formulation, and direction of subsequent research. Offered annually. *Prereq: SOCI 001 and SOCI 060; or cons. of instr.*

SOCI 121. Social Problems in Urban Society
3 sem. 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. Offered occasionally.

SOCI 122. Sociology of the Life Course
3 sem. hrs.
The study of socialization, the influence of family, peers, schooling, mass media, occupational groups and community on human development. Reciprocity between the concept of self and institutional influences throughout the course of life from infancy through old age. Various sociological perspectives, developmental theories and critiques. Offered occasionally. *Recommended Prereq: SOCI 001.*

SOCI 123. Self, Language and Social Interaction 3 sem. hrs.
Exploration of the everyday relations and worlds of people in social interaction. The working languages of self and society are discussed as practical features of circumstance. Offered occasionally. SOCI 001 recommended.

SOCI 124. Behavior Patterns of Youth
3 sem. hrs.
The position of youth in modern society. Origin and implications of the generation gap, status ambiguity and its consequences, dependency and independence, prolonged aspiration and the pursuit of identity, youth in rebellion, the youth culture. Offered occasionally. SOCI 001 recommended.

SOCI 125. Sociology of Aging 3 sem. 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. Offered occasionally. SOCI 001 recommended.

SOCI 126. Urban Life 3 sem. 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. Offered occasionally. *Prereq: SOCI 001 recommended.*

SOCI 127. Sociology of Community
3 sem. hrs.
Discussion of contemporary problems of rural, urban and suburban communities including ecological and communication patterns, problems of identity, organization and motivation. Offered occasionally. *Prereq: SOCI 001 recommended. May not be taken for credit by students who have received credit for SOCI 132.*

SOCI 128. Sociology of Human Values
3 sem. hrs.
Definitions of values in economics, linguistics, communication and sociology. The value system of selected sociologists. Values and socio-cultural pluralism. Offered occasionally. *Prereq: SOCI 001 recommended. May not be taken for credit by students who have received credit for SOCI 143.*

SOCI 129. Topics on the Individual, Culture and Society 3 sem. hrs.
Course on a special topic and theme involving the individual, culture, and society. May be taken twice, provided the topics differ. The specific topic of each offering will be designated in the *Timetable of Classes*. Offered occasionally. *Prereq: SOCI 001 recommended.*

SOCI 131. Urban Sociology 3 sem. hrs.
Urban society with special consideration of the problems of dealing with the structures, institutions, agencies and decision-making units in a metropolitan area. Offered occasionally. *Recommended prereq: SOCI 001.*

SOCI 132. Health Care Systems
3 sem. 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. Offered annually. *Recommended prereq: SOCI 001.*

SOCI 133. Medical Sociology 3 sem. 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. Offered occasionally. *Prereq: SOCI 001 recommended. May not be taken for credit by students who have received credit for SOCI 179.*

SOCI 134. Sociology of Religion 3 sem. hrs.
The sociological study of religious groups, institutions and behavior, including relationships between religion and other areas of social life. Offered occasionally. *Prereq: SOCI 001 recommended. May not be taken for credit by students who have received credit for SOCI 144.*

SOCI 135. Sociology of Work and Occupations 3 sem. 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. Offered occasionally. *Prereq: SOCI 001 recommended.*

SOCI 136. Sociology of Education
3 sem. hrs.
Sociological analysis of educational institutions with primary emphasis on contemporary U.S. urban education, student subcultures, school-community relations and innovations. Offered annually. *Prereq: SOCI 001 recommended. May not be taken for credit by students who have received credit for SOCI 176.*

SOCI 137. Complex Organizations
3 sem. 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. Offered occasionally. *Prereq: SOCI 001 recommended.*

SOCI 139. Sport and Society 3 sem. 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; sports and community identification. The course will show how sports is a pervasive feature of everyday urban life. Offered occasionally. *Prereq: SOCI 001 recommended.*

SOCI 151. Sociology of Mental Illness

3 sem. 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. Offered occasionally. *Prereq: SOCI 001 recommended. May not be taken for credit by students who have received credit for SOCI 181.*

SOCI 152. Juvenile Delinquency/Juvenile Justice

3 sem. hrs.

SOCI 001 recommended. Same as CRLS 152; CRLS majors register for CRLS 152.

SOCI 153. Deviance and Social Control

3 sem. 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. Offered occasionally. *Prereq: SOCI 001 recommended.*

SOCI 154. Sociology of Law

3 sem. hrs.

The social components of legal organizations and procedural systems. The role of law as an instrument of social control and social change. SOCI 001 recommended. May not be taken for credit by students who have received credit for SOCI 178.

SOCI 159. The Social Reality of Crime and Justice

3 sem. 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. *Prereq: Recommended prerequisite: SOCI 001.*

SOCI 162. Sociology of Sex and Gender

3 sem. 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. Offered occasionally. *Prereq: SOCI 001 recommended. May not be taken for credit by students who have received credit for SOCI 126.*

▲ SOCI 163. Race and Ethnic Relations

3 sem. 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. Offered occasionally. *Prereq: SOCI 001 recommended.*

SOCI 164. African-American Social Thought

3 sem. 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. Offered occasionally. *Recommended Prereq: SOCI 001.*

▲ SOCI 165. Social Inequality

3 sem. hrs.

Theories and systems of social class in modern society. Societal structures and processes resulting from stratification phenomena. Offered occasionally. *Prereq: SOCI 001 recommended.*

▲ SOCI 166. Race and Family

3 sem. hrs.

The course 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. Offered occasionally. *Recommended prereq: SOCI 001, SOCI 021, or ANTH 101.*

SOCI 167. Women, Crime, and Criminal Justice

3 sem. hrs.

SOCI 001 recommended. Same as CRLS 167; CRLS majors register for CRLS 167.

SOCI 168. Political Sociology

3 sem. hrs.

The interrelationship of politics and society. Special consideration of leadership analysis, party systems, public opinion, electoral behavior and conflict situations. Offered occasionally. SOCI 001 recommended. May not be taken for credit by students who have received credit for SOCI 177.

SOCI 182. Comparative Sociology

3 sem. hrs.

Similarities and differences among major social institutions. Emphasis on organizational, demographic, and ecological features. Comparisons of political, economic, educational, familial and other institutions. Contents vary; subtitles indicate precise contents. *Prereq: SOCI 001 recommended. May not be taken for credit by students who have received credit for SOCI 161.*

SOCI 183. Population

3 sem. hrs.

Demographic analysis including characteristics of the U.S. and world population, social and cultural factors related to population changes and the role played by demographic forces in society. Offered occasionally. *Prereq: SOCI 001 recommended. May not be taken for credit by students who have received credit for SOCI 130.*

SOCI 186. Social Change

3 sem. 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. Offered occasionally. SOCI 001 recommended. May not be taken for credit by students who have received credit for SOCI 166.

SOCI 188. Topics in Sociological Theory

3 sem. 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 *Timetable of Classes*. Offered occasionally. *Prereq: SOCI 001 recommended. May be taken twice provided topics differ.*

SOCI 189. Sociological Practice

3 sem. hrs.

Selected topics dealing with the application of sociology to social and personal issues and problems. Primary topics include program evaluation, clinical sociology, policy analysis, and social forecasting. Contents vary; see *Timetable of Classes* for precise contents. May be taken more than once if subtitles differ. Offered occasionally.

SOCI 193. Internship in Sociology

3 sem. hrs.

Supervised field experience in relating sociological theory, concepts, and research methodology to real life or applied settings. Approximately 8-10 field hours per week are expected. Additional readings and reports integrating experiences and observations with sociological ideas will be required. Students may continue work begun in SOCI 193 by enrolling in SOCI 195 or 199 in subsequent term. Offered every term. *Prereq: Jr. stndg. and SOCI Major and SOCI 100 and SOCI 104 and cons. of dept. ch.; Quality point average of 2.5 in Sociology courses. Arrangements made during previous semester with an instructor.*

SOCI 195. Independent Study

1-3 sem. hrs.

Supervised study in a specific area of Sociology. Offered every term. *Prereq: cons. of instr. and cons. of dept. ch.; Twelve hours of Sociology courses with a QPA of 2.5.*

SOCI 196. Seminar in Sociology

3 sem. 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. Offered every year. *Prereq: SOCI Major; or cons. of dept. ch.; 21 hours of sociology and SOCI major*

SOCI 198. Topics in Sociology

3 sem. hrs.

Lecture course on special areas and themes. May be taken a maximum of two times as long as topics differ. The specific topic of 198 will be designated in the *Timetable of Classes*. Offered occasionally.

SOCI 199. Senior Thesis

1-3 sem. hrs.

Sociology majors with a quality point average of 3.000 or higher may write a thesis under direction of an adviser. Offered every term. *Prereq: Sr. stndg. and SOCI 100 and SOCI 104 and cons. of instr. and cons. of dept. ch.*

THEOLOGY (THEO)

Chairperson and Associate Professor:
Laurance

Assistant Chairperson and Associate Professor: M. Johnson

Distinguished Professor: D. Coffey (*William J. Kelly, S.J. Chair*), Fahey (*Doerr Chair*)

Professor: Carey, Hagen (*Emeritus*), Kurz, Maguire, Misner (*Emeritus*), Rossi, Schultenover

Visiting Professor: Mayotte, Wriedt

Associate Professor: Barnes, Dabney, Del Colle, Dempsey, Duffey, Gawronski, Goltzlin, Hills, Firer Hinze, Hinze, Hughson, Kelly (*Emeritus*), Masson, Pace, Schmitt, P. Stockhausen (*Emeritus*), Zemler-Cizewski
Assistant Professor: Deahl, Mattox, Mueller, Omar, Schaefer

Visiting Assistant Professor: Crowe, Maniscalco, Zemler

Lecturer: Anderson, Bonjean, Caldwell, Ewens, Jenkins, Jones, Kroemer, Lambeck, Laske, Long, Lopez-Kaley, Ogle, Orji, Peterson, Silberg, Slocum, Stegman, Van Til, Wilcox, Yossa

MAJOR:

Thirty-three hours, Theology 001 plus 30 upper division hours:

Either two-course sequence, THEO 100/103 or THEO 101/102; THEO 106; THEO 135; one course from THEO 137, 140, 142, 146; two courses from THEO 155, 157, 158; one course from THEO 165, 166, 167, 168; one course from THEO 182, 184, 185, 186; and THEO 197. 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 language (French/German).

MINOR:

At least 18 hours, of which 15 must be upper division courses.

Note: See Theology Requirements as stated in the College, School and Programs section of this bulletin.

TEACHING MAJOR IN RELIGIOUS STUDIES:

Thirty-six hours, THEO 001 plus 33 upper division credits, including the Wisconsin Department of Public Instruction requirements:

- Study of Major Religious Traditions, one course from THEO 182–186.
- Role of Religion in Contemporary Society, two courses: THEO 146 or 148 or HIST 115 or 116; and THEO 116 or 150 or 165 or 166 or 168 or 180.
- Religion and Other Institutions, one course: ANTH 112 or SOCI 134 or THEO 167.

Additional requirements are: Either two-course sequence, THEO 100/103 or THEO 101/102; THEO 106; THEO 135; THEO 155; THEO 157; and THEO 158.

Students wishing state certification also need the regular teacher education sequence: 36 hours, including a special methods course and student teaching. See the School of Education section of this bulletin for the

university and state requirements for teacher education.

Please refer to "Core Curriculum Requirements for Education Majors" under "Graduation Requirements" in the College of Arts and Sciences section of this bulletin.

TEACHING MINOR IN RELIGIOUS STUDIES:

A total of 22 upper division hours is required. This must include the Wisconsin Department of Public Instruction requirements (see "Teaching Major in Religious Studies," above).

THEOLOGY CURRICULUM:

The University Core of Common Studies (UCCS) Theology requirement for graduation is the six hours sequence of two courses: THEO 001 and any second-level course (THEO 100–119) approved for inclusion in the UCCS (approved courses are marked in the bulletin); the College of Arts and Sciences Theology requirement is the full sequence of THEO 001, a UCCS approved second-level course, and any third-level course (THEO 120–199). Students may choose as electives additional courses, beyond the requirements of their college, from both the second- and third-level offerings.

The comprehensive educational goal of the theology curriculum is theological literacy, that is, an intellectual formation – to a level legitimately expected of graduates of a Catholic university – that habituates students, through investigation of various theological sources, to approaches, responses, and critiques appropriate to this academic discipline: "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, from creation to fulfillment in Jesus Christ, which characterizes the Christian worldview. This objective takes precedence in the first course, "Introduction to Theology," THEO 001; this first-level course introduces key sources and questions of theology, at the same time 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 theologi-

cal 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.

FIRST LEVEL: INTRODUCTORY COURSE

▲ THEO 001. Introduction to Theology 3 sem. 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. Offered every term Second Level: Theological Texts and Focal Topics (God, Human Person, People of God)

SECOND LEVEL: EXPLORING THEOLOGICAL TEXTS AND INTERCONNECTIONS

▲ THEO 100. Hebrew Scriptures/Old Testament Overview 3 sem. 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. Offered annually. *Prereq:* *Soph. stndg. and THEO 001.*

▲ THEO 101. New Testament Overview 3 sem. 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. Offered annually. *Prereq:* *Soph. stndg. and THEO 001.*

▲ THEO 102. Hebrew Scriptures/Old Testament Selected Books 3 sem. 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. Offered annually. *Prereq:* *Soph. stndg. and THEO 001.*

▲ THEO 103. New Testament Selected Books

3 sem. 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. Offered annually. *Prereq: Soph. stndg. and THEO 001.*

▲ THEO 104. The Bible Through the Ages

3 sem. hrs.

Understandings and uses of the Bible in the history of Christianity. Revelation, Faith, Tradition, Scripture. Offered annually. *Prereq: Soph. stndg. and THEO 001.*

▲ THEO 106. Theology Through the Centuries 3 sem. hrs.

Trinity, Incarnation and Salvation in the history of Christian thought over a substantial portion of its range. Offered annually. *Prereq: Soph. stndg. and THEO 001.*

THEO 108. Church and World in the History of Religious Thought 3 sem. hrs.

The consequences in Christian life and thought of the coexistence of faith community and society in its political, economic, and/or cultural dimensions. Attention to more than one period (Early Church, Byzantine, Middle Ages, Reformation, Recent). Offered occasionally. *Prereq: Soph. stndg. and THEO 001.*

THEO 109. Good and Evil, Past and Present 3 sem. 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). Offered occasionally. *Prereq: Soph. stndg. and THEO 001.*

▲ THEO 110. Quests for God, Paths of Revelation 3 sem. 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. Offered every term. *Prereq: Soph. stndg. and THEO 001.*

▲ THEO 111. Explorations in Christian Theology 3 sem. 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. Offered every term. *Prereq: Soph. stndg. and THEO 001.*

▲ THEO 115. Christian Discipleship 3 sem. 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. Offered every term. *Prereq: Soph. stndg. and THEO 001.*

▲ THEO 116. Christian Faith in Cultural Contexts 3 sem. 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). Offered annually. *Prereq: Soph. stndg. and THEO 001.*

THIRD LEVEL: FAITH, RESPONSIBILITY, AND THE INTELLECTUAL LIFE**THEO 120. Digging the Bible: Archeology and Biblical Studies** 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 121. Truth, Falsehood, and Authority in the Bible 3 sem. hrs.

Interdisciplinary survey and analysis of the various claims to "truth" found in the Bible, e.g. divine commands, true and false prophecy, wisdom, the example of Jesus. Special attention to the historical and social situations to which these claims were originally addressed. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 122. The Bible in Its Interpretive Communities 3 sem. hrs.

The ways in which the Bible was produced, and the ways in which it has been understood and used in the course of time and in the context of different religious and scholarly communities. Intertextuality, canon, history of interpretation, modern critical methods, postmodern literary perspectives, liberationist hermeneutics. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 123. From Scripture to Living Beliefs 3 sem. hrs.

Interdisciplinary interpretations, application, and actualizations of Biblical texts in contemporary Christian or Catholic creeds, life, worship, moral issues, beliefs, and practices. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 124. The Bible in Liturgy and Lectionary 3 sem. hrs.

Reading of Scripture in public worship. Historical and contemporary views on the selection and combinations of passages from the Bible for the liturgical year. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 126. The Bible in the Jewish Community 3 sem. hrs.

The uses of the Bible in Jewish life and practice, in synagogue and in private use. Haggadah and Halakah. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 127. The Bible in Black Religious Experience 3 sem. hrs.

The use and meaning, in the religious and cultural lives of the enslaved African peoples and their descendants in the United States, of some of the most significant texts of the Hebrew Bible and Christian scriptures. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 129. Women in the Bible 3 sem. hrs.

Status and roles of women in selected biblical texts. Social and historical background with emphasis on narrative technique and theological themes. Offered biennially. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 132. New Testament Narratives 3 sem. hrs.

The Gospels as stories. Literary analysis, comparing the Gospels with each other and examining their similarity and distinctiveness with other narratives. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 134. Special Topics in Biblical Theology 3 sem. hrs.

Significant topics in Old Testament, Intertestamental, or New Testament literature. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 135. Theology in the Early Church 3 sem. hrs.

Basic theological questions and developments during the era of the Church Fathers. Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 137. History and Theology of the Christian East 3 sem. 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. Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 138. St. Augustine: The Man and the Theologian 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 140. Theology in the Middle Ages 3 sem. hrs.

Basic theological questions and developments during the Middle Ages, from the Carolingians to the fourteenth century. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 141. Theology in the Thirteenth Century 3 sem. hrs.

Survey of Dominican and Franciscan theology at the universities of Paris and Oxford, with

special attention to the work of Albert the Great, Thomas Aquinas, Bonaventure, and Robert Grosseteste. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 142. Theology in the Reformation Era 3 sem. hrs.

Basic theological questions and developments during the late Middle Ages and early Reformation. Current ecumenical issues also addressed. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 143. Martin Luther 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 146. Theology in America 3 sem. hrs.

Basic theological questions and developments from Puritanism to the present. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 148. American Catholic Life and Thought 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 149. Special Topics in Historical Theology 3 sem. hrs.

Significant figures and themes in the history of religious thought, examined in their historical context and contemporary significance. Topics and periods vary. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 150. Contemporary Atheism and Theism 3 sem. hrs.

Origins and varieties of contemporary atheism. The existence of God and Christian theistic interpretations. Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 154. Theology of the Holy Spirit 3 sem. 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. Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 155. Jesus the Christ 3 sem. 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. Offered annually. *Prereq: Jr.*

stndg. and THEO 001; and one second-level course.

THEO 157. Theology of the Church

3 sem. hrs.

The Church in light of the documents, event, 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. Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 158. Sacraments and Christian Life

3 sem. 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. Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 159. The Eucharist 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 161. Christian Prayer and Mysticism

3 sem. 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. Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 163. Protestant Thought and Practice 3 sem. 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. stndg. and THEO 001; and one second-level course.*

THEO 164. Special Topics in Systematic Theology 3 sem. hrs.

Significant movements and/or major figures in contemporary systematic theology. Their historical antecedents and cultural context. Specific topics to be specified in the *Timetable of Classes*. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 165. Christian Faith and Justice

3 sem. 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. Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 166. Christian Theology in Global Contexts 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 167. Family, Church and Society

3 sem. 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." Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 168. Theology, Violence and Non-Violence 3 sem. 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. Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 170. Theology and the Natural Sciences 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 171. Foundations of Ecological Ethics 3 sem. hrs.

Exploration of religious foundations for ecological ethics, with a focus on the Catholic tradition and social teachings; application to contemporary ecological problems. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 175. Medical Ethics 3 sem. 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. Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 179. Special Topics in Moral Theology 3 sem. hrs.

Selected issues in contemporary moral life; selected themes from classical and contempo-

rary writings in moral theology and Christian ethics. Topics vary, as specified in the *Timetable of Classes*. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 180. Christ and World Religions: Theology of Interreligious Dialogue
3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 182. Survey of World Religions
3 sem. hrs.

An overview of the major religious traditions of the world: Hinduism, Buddhism, religions of China and Japan, Judaism, Christianity, and Islam. Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 184. Jewish Thought and Practice
3 sem. hrs.

Meaning of Jewish history. Philosophical and social understanding of the Jewish experience. Ruling ideas, myths, symbols, and rites. Offered every term. *Prereq: Jr. stndg. and THEO 001; and one second-level course.* Partially funded by the Jewish Chautauqua Society.

THEO 185. Islam 3 sem. 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. Offered occasionally. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 186. Hinduism, Yoga and Buddhism
3 sem. 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. Offered annually. *Prereq: Jr. stndg. and THEO 001; and one second-level course.*

THEO 190. Introductory Biblical Hebrew
3 sem. hrs.

Grammar and exercises. Offered occasionally. Not applicable toward theology core requirement.

THEO 191. Readings in Biblical Hebrew
3 sem. hrs.

Selections from Old Testament prose. *Prereq: THEO 190 or equivalent; Offered occasionally. (Not applicable toward theology core requirement).*

THEO 195. Independent Study 1-3 sem. hrs.
Offered every term. *Prereq: Jr. stndg. and THEO 001 and cons. of dept. ch.; and one second-level course.*

THEO 197. Capstone Seminar 3 sem. hrs.
Exploration of a theological topic involving issues of the theological method and interrelatedness of the subdisciplines of biblical, historical, systematic and moral theology. Colloquium paper demonstrating critical analysis in a specific field. Offered annually. *Prereq: Sr. stndg.*

and *THEO 001 and cons. of dept. ch.; and one second-level course.*

SPECIAL PROGRAMS

ARTS AND SCIENCES (ARSC)

ARSC 007. First-Year Seminar
1-3 sem. hrs.

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; limited to first-year students. *Prereq: Freshman Standing; S/U grade assessment*

▲ARSC 010. Major Concepts in Modern Science 1 4 sem. 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. Offered fall term. 3 hrs. lec., 2 hrs. lab., 4 sem. hrs.

May be counted as Natural Science toward the Arts & 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.

▲ARSC 011. Major Concepts in Modern Science 2 4 sem. 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.

ARSC 050. Career Planning and Decision-Making 1 sem. hr.

Assessment of values, personality characteristics, interests, goals and decision-making skills related to career planning. Also includes job search and labor market information. Offered every term and summer session. S/U grade assessment.

ARSC 060. Introduction to Trial Advocacy 1
0 sem. hrs.

Offered all term. S/U grade assigned for ARSC061 partially based on work completed for ARSC060. ARSC061 must be completed during same academic year. Grade of CR will be issued for successful completion of ARSC060.

ARSC 061. Introduction to Trial Advocacy 2
2 sem. hrs.

A practicum that 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. Seminar format. To receive credit, students must complete both courses in the same academic year. ARSC assessment for second term only. Offered spring term. *Prereq: ARSC060; S/U grade assessment partially based on work completed in ARSC 060. Must be completed during same academic year as ARSC 060.*

ARSC 100. Arts and Sciences Colloquium
1-3 sem. hrs.

An interdisciplinary course dealing with a central theme, subject or problem. Offered according to availability of faculty, student interest and resources.

ARSC 101. International Study 0 sem. hrs.

This is a zero-credit. Part-time status course designed to keep students' files active while studying abroad through a non-Marquette program. Offered every term. *Prereq: Consent Required; Consent of College Office; acceptance by the program. Approved for full-time study at another college/university abroad, but will NOT be certified as full-time by Marquette University.*

ARSC 110. Capstone Seminar for Interdisciplinary Minor in Environmental Ethics 3 sem. hrs.

Culminating the interdisciplinary minor in environmental ethics, this seminar provides students with an opportunity to explore the ethical dimensions of an environmental problem informed by the minor's core disciplines. Students investigate regional sources of information, consult with experts who are invited to the seminar sessions, and collaborate in identifying an ethical approach to resolving the problem. Service opportunities may be offered to students in organizations, agencies or businesses that are addressing the problem. Lead rotationally by philosophy and theology professors, this seminar counts as an elective in the professor's discipline. *Prereq: Jr. stndg. and INEE Minor and cons. of instr.; and completion of three courses required for minor.*

ARSC 120. The Environment and the City
3 sem. hrs.

Interdisciplinary lectures and discussion focusing on the science, ethics, and economics of environmental issues that affect cities. Issues covered include cities and a sustainable environment, the limits to urban growth, social justice and environmental preservation, air and water pollution, solid waste disposal, and recycling. Previous urban/environment courses desirable. *Prereq: Jr. stndg.*

ARSC 130. Medieval Models (Medieval Studies Colloquium) 3 sem. hrs.

Interdisciplinary treatment of medieval topics featuring presentations by faculty of several departments. Specific topics and faculty vary. Offered occasionally. *Prereq: Second semester Freshman standing. May be counted towards Medieval Studies minor.*

ARSC 140. Perspectives on Women in Society 3 sem. hrs.

Interdisciplinary lectures and discussions focusing on gender as a dynamic component in human institutions and experience. Includes analysis of myths and realities of women's experiences from a social science, science and humanities perspective. Taps the expertise of faculty across campus who research in women's issues. Service learning is a requirement for this course.

ARSC 150. Interdisciplinary Seminar in Family Studies 3 sem. 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. Offered spring term. *Prereq: SOCI 021; plus 12 additional hours from the minor in Family Studies.*

ARSC 160. Senior Capstone Seminar in International Affairs 3 sem. hrs.

Senior seminar for INIA majors designed to bring political, economic, and historical approaches to bear on specific issues in international affairs. Topics vary. The course combines readings, class discussions, and foreign language application, with lectures and panel discussions by faculty specialists in international affairs. Offered spring term. *Prereq: Sr. stndg. and INIA Major*

ARSC 170. Conceptualizing Justice and Peace 1 sem. hr.

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; Twelve weeks; S/U grade assessment.*

ARSC 171. Capstone Seminar in Justice and Peace 2 sem. 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 coursework in the minor. Service and experiential learning opportunities may be offered. *Prereq: Sr. stndg. and INJP Minor*

ARSC 190. Arts and Sciences Undergraduate International Exchange 0 sem. hrs.

This is a zero-credit, full-time status course designed to keep students' files active while studying at one of Marquette's overseas partner institutions through the international student exchange program. Upon approval, students are enrolled in a college or university abroad as a full-time student for a term or a year. Course credits are transferable to Marquette. Multiple sections correspond to overseas institutions and can be found in the *Timetable of Classes*. Approval by College of Arts and Sciences.

ARSC 192. Arts and Sciences Affiliated Study Abroad Program 0 sem. hrs.

This is a zero-credit, full-time status course designed to keep students' files active while studying through an affiliated study abroad program. *Prereq: Consent Required; Consent of College Office; Acceptance by the program.*

ARSC 193. Internship 1-4 sem. hrs.

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, S/U grades. Grade is determined by evaluation of work performance and a final written assignment. *Prereq: Jr. stndg. and 3 MU QPA and Consent Required; Consent of Associate Dean, College of Arts and Sciences and Director of the Internship. S/U grade assessment.*

ARSC 194. Seminar on Service Learning .5 sem. hrs.

Theoretical aspects of leadership, service, and social analysis, approached through required readings and written reflection on the integration of service with theory. Social problems discussed from the perspective of process and change. May be taken up to eight times for credit, but credits do not count toward university or college graduation requirements. Offered every term. S/U grading.

Limited to Burke Scholarship students. Not to be considered part of the graduation requirements of the college or university.

EDUCATIONAL OPPORTUNITY PROGRAM (EDOP)**EDOP 010. Introductory Writing Colloquium** 3 sem. hrs.

Designed to facilitate the acquisition of writing skills required in the university context. Addresses grammatical and structural problems. Includes readings, focused discussion and extensive practice in writing and editing essays, interviews, reports, a case study and a research paper. Not applicable to total number of credits required for graduation. Offered occasionally. *Prereq: Cons. of EOP College Prog. Dir.*

EDOP 100–101. Pre-Law Colloquium 1,2 3 sem. hrs.

Intended for students planning to enter law school. Offered occasionally. *Prereq: Cons. of the Dir. of the EOP College Prog. Limited to 20.*

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College of Business Administration

The mission of the College of Business Administration is to provide a quality education grounded in Catholic, Jesuit values that enables students to function effectively and ethically in a diverse workplace and global economy. Our goal is to foster a community of scholars committed to improvement and collaboration, and to enhance interaction with business and service organizations. In doing this, we create a superior environment for our students to learn and develop.

UNDERGRADUATE PROGRAM DESCRIPTION

Professional undergraduate business education at Marquette University provides students with an educational foundation that makes them effective and responsible business 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 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 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 business leader. It provides each student with an introduction to the various functions generic to an organization such as marketing and finance and manufacturing and service operations. 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 policy making with-

in 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 skill building, helping students develop their personal potential, allowing them to grow professionally as their careers progress. The building of skills in areas such as communication, quantitative analysis, team building, leadership and critical thinking 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

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. Details on these master's programs are contained in the *Graduate Bulletin*.

MAJORS OFFERED

Majors in the College of Business Administration are offered in accounting, business economics, finance, human resource management, marketing, information technology, international business, and operations and supply chain management; students also may earn a major in general business. The college also offers minors to non-business students in business administration, human resources, 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. Day and evening 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 Part-time Studies, 1212 Building, 103.

ADMISSION REQUIREMENTS

For admission requirements for the College of Business Administration see the Admissions Procedures in the University section of this bulletin.

GRADUATION REQUIREMENTS

AMOUNT AND QUALITY OF WORK

A candidate for a baccalaureate degree in business administration must earn 129 semester hours of credit. In addition to the overall requirement of a 2.000 quality point average, students enrolled in the College of Business Administration must achieve a 2.000 quality point average in all courses offered by the college. Candidates in the accounting curriculum must earn a 2.500 quality point average in all courses offered by the college.

1. UNIVERSITY CORE OF COMMON STUDIES AND COLLEGE CURRICULUM REQUIREMENTS

Rhetoric (R) 8 credits
ENGL 001*, ENGL 002* and CMST 012

Mathematical Reasoning (MR) 9 credits
MATH 070*, MATH 071* and MANA 028

(If student's MATH ACT score is greater than 28 or MATH SAT score is greater than 625, then the student may complete MATH 80* (4 credits) in lieu of MATH 70 and MATH 71. The student would still be required to complete an additional 2 elective credits.)

| | |
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| Individual and Social Behavior (ISB) | 6 credits |
| ECON 043* and ECON 044 | |
| 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.* | |
| 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 050* and PHIL 104* | |
| <i>See Business Curriculum: Ethical and Societal Issues</i> | |
| Theology (T) | 6 credits |
| THEO 001* and THEO elective* | |

Non-business electives 12 or 18 credits

Accounting Majors must complete 12 elective credit; all other majors, 18 elective credits.

* fulfills UCCS and College Curriculum Requirements

▲ Indicates UCCS courses throughout the bulletin.

Note: Business students may NOT double count University Core of Common Studies (UCCS) courses.

| | |
|---|---------------------------------------|
| Total non-College of Business Administration credits | Accounting majors 59 |
| | All other majors 65 |

2. BUSINESS CURRICULUM COURSES:

| | |
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| LEAD 001 (Foundations for Business Leadership) | 1 |
| <i>NOTE: Students transferring into the college are required to complete</i> | |
| <i>BUEX 002 (Computer Literacy in Business) instead of LEAD 001.</i> | |
| LEAD 002 (Developing Critical Skills for Business Leadership) | 1 |
| LEAD 003 (Applying Business Leadership Skills) | 1 |
| LEAD 004 (Strategies for Entering the Business World) | 1 |
| ACCO 030 (Principles of Financial Accounting) | 3 |
| ACCO 031 (Principles of Managerial Accounting) | 3 |
| ECON 108 (Applied Business Economics) [non-ECON majors] | |
| or ECON 110 (Applied Microeconomic Analysis) [ECON majors] | 3 |
| FINA 180 (Introduction to Financial Management) | 3 |
| MANA 156 (Behavior and Organization) | 3 |
| MANA 170 (Operations and Supply Chain Management) | 3 |
| MARK 140 (Introduction to Marketing) | 3 |
| MANA 120 (Introduction to Information Technology) [non-ACCO majors] | |
| or ACCO 144 (Accounting Information Systems) [ACCO majors] | 3 |
| Ethical and Societal Issues – select one from: | 3 |
| MANA 181 (Business and Its Environment) | |
| PHIL 108 (Business Ethics) | |
| MANA 182 (Strategic Management) | 3 |
| Legal and Regulatory Environment – select one from: | 3 |
| BULA 127 (Legal Environment of Business) [ACCO majors] | |
| BULA 132 (International Business Law) | |
| MANA 160 (Management of Human Resources) [HURE majors] | |
| Total Business Curriculum Core Credits | 37 |

3. MAJOR COURSES

Business degree students also must complete the requirements for one of the following majors: accounting, business economics, finance, human resources, information technology, marketing, international business, operations and supply chain management, or general business. Double counting of courses for two or more majors is not permitted.

At least one International Business course within or outside the major field(s) in the College of Business is required.

ACCOUNTING MAJOR (33 CREDITS)

- ACCO 110 (Accounting Communications)
- ACCO 120 (Intermediate Accounting)
- ACCO 121 (Advanced Accounting 1)
- ACCO 132 (Cost Accounting)
- ACCO 134 (Individual Income Taxation)
- BULA 128 (Business Law)
- Three ACCO electives from: ACCO 105, ACCO 122, ACCO 135, ACCO 140, ACCO 141, ACCO 142, ACCO 146
- Two business electives

Effective January 1, 2001, in Wisconsin, Illinois, and most, if not all states, students will need 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 Bulletin or contact the Department of Accounting at (414) 288-7340.

BUSINESS ECONOMICS MAJOR (27 CREDITS)

- ECON 120 (Intermediate Macroeconomic Analysis)
- Four upper division ECON electives
- Four business and/or economics electives

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 Bulletin or contact the Department of Economics at (414) 288-7377.

GENERAL BUSINESS MAJOR (27 CREDITS)

- Nine upper division business electives.

FINANCE MAJOR (27 CREDITS)

Specific Finance Course Requirements:

- FINA 181 (Investment Analysis)
- FINA 183 (Advanced Financial Management)
- Three FINA electives from:

Note: Only one of the three electives may be in real estate

- FINA 105 (Internship in Finance)
- FINA 112 (Real Estate Valuation and Financing)
- FINA 182 (Investment Management)
- FINA 184 (Personal Financial Planning)
- FINA 185 (International Finance)
- FINA 186 (Bank Management)
- FINA 187 (Cases in Financial Management)
- FINA 188 (Introduction to Financial Derivatives)
- FINA 189 (Issues in Finance)

- Four business electives

HUMAN RESOURCES MAJOR (27 CREDITS)

Specific Human Resource Course Requirements:

- Five electives from:
 - MANA 105 (Internship in Human Resources)
 - MANA 155 (An Introduction to Diversity in Organizations)
 - MANA 158 (Motivation and Leadership)
 - MANA 162 (Employee Benefit Systems)
 - MANA 163 (Compensation of Human Resources)
 - MANA 164 (Labor Relations and Collective Bargaining)
 - MANA 166 (Employment of Human Resources)
 - MANA 167 (Training and Development)
 - MANA 168 (Issues in Human Resources)
- Four business electives

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 Bulletin or the director of the Master's in Human Resources program at (414) 288-3643.

INFORMATION TECHNOLOGY MAJOR (27 CREDITS)

Specific Information Technology Course Requirements:

- MANA 121 (Business Applications Program Development)
- MANA 122 (Data Base Management Systems)
- MANA 126 (Information Systems Analysis)
- MANA 127 (Information Systems Design and Implementation)
- One elective from:
 - MANA 106 (Internship in Information Technology)
 - MANA 124 (Telecommunications)
 - MANA 128 (Advanced Business Applications Program Development)
 - MANA 129 (Issues in Information Technology)
- Four business electives

MARKETING MAJOR (27 CREDITS)

Specific Marketing Course Requirements:

- MARK 142 (Marketing Research)
- MARK 150 (Marketing Management)
- Three MARK electives from:
 - MARK 105 (Internship in Marketing)
 - MARK 143 (Integrated Marketing Communications)
 - MARK 144 (Marketing Logistics and Distribution Strategy)
 - MARK 145 (Product and Pricing Strategy)
 - MARK 146 (Consumer Behavior)
 - MARK 148 (Sales Management)
 - MARK 152 (Retailing Management)
 - MARK 153 (International Marketing)
 - MARK 155 (Business-to-business Marketing)
 - MARK 156 (Direct Marketing)
 - MARK 157 (Marketing and Society)
 - MARK 159 (Issues in Marketing)
- Four business electives

OPERATIONS AND SUPPLY CHAIN MANAGEMENT MAJOR (27 CREDITS)

Specific Operations and Supply Chain Management Requirements:

- MANA 171 (Manufacturing Management)
- MANA 174 (Logistics and Purchasing Management)
- Two electives from:
 - MANA 172 (Service Operations Management)
 - MANA 173 (Quality and Process Management)
 - MANA 179 (Issues in Operations and Supply Chain Management)
(*may be counted only once in this area*)
- One elective from:
 - MANA 108 (Internship in Operations and Supply Chain Management)
 - MANA 122 (Data Base Management Systems)
 - MANA 126 (Information Systems Analysis)
 - MANA 176 (Management Science)
 - MANA 183 (International Management)

An additional course from the list above (MANA 172, 173, or 179, second topic)
- Four Business Electives

INTERNATIONAL BUSINESS MAJOR

(12 CREDITS PLUS AN ADDITIONAL MAJOR IN THE COLLEGE)

Students completing the international business major must also complete another a major in business. Double counting of courses for two majors is not permitted.

- Required Courses (12 credits)
 - Select four electives from:
 - ECON 154 (International Currency Markets)
 - ECON 155 (Comparative Economic Development)
 - ECON 156 (International Trade)
 - BULA 132 (Legal and Regulatory Environment of International Business)

ACCO 141 (International Accounting)
 FINA 185 (International Finance)
 MANA 183 (International Management)
 MARK 153 (International Marketing)
 INBU 105 (Internship in International Business)
 INBU 189 (Seminar in International Business)

One of the four electives above must be either ECON 154 or ECON 156.
 A maximum of two international business electives can be economics.

- Foreign Language

Working competency in a least one approved foreign language is required, satisfied by either (1) completing foreign language courses (082 and 182) in 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.

5. GRADUATION REQUIREMENTS

- A minimum total hours of 129.
- A minimum Q.P.A. of 2.000 must be earned in all courses taken at Marquette University.
- A minimum Q.P.A. 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 004 or 010.
- At least one International Business elective must be completed.
- At least 50 percent of the business credit hours required for the business degree must be taken at Marquette University.
- 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.
- It is the candidate's responsibility to meet all university academic, financial, and administrative requirements and procedures as outlined elsewhere in this bulletin.

MINORS AVAILABLE IN THE COLLEGE OF BUSINESS ADMINISTRATION

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 | CREDITS |
|------------------|--|
| BUEX 002 | Computer Literacy in Business 0 |
| ACCO 030 | Financial Accounting 3 |
| ACCO 031 | Managerial Accounting 3 |
| ECON 043 | Principles of Microeconomics 3 |
| ECON 044 | Principles of Macroeconomics 3 |
| MANA 028 | Business Statistics ^a 3 |
| FINA 180 | Financial Management 3 |
| MANA 156 | Organizational Behavior 3 |
| MARK 140 | Introduction to Marketing 3 |
| TOTAL | 24 |

^a MATH 060, MATH 164 or PSYC 060 may be substituted.

- A “C” grade or better must be earned in each course except BUEX 002; student must earn a passing grade (CR) in BUEX 002.
- 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 43 and 44) to no more than 25 percent of the total credit hours applied to their degree programs.

MINOR IN HUMAN RESOURCES

| REQUIRED COURSES | CREDITS |
|-----------------------|---|
| ACCO 030 | Financial Accounting. 3 |
| ECON 043 | Principles of Microeconomics. 3 |
| MANA 028 | Business Statistics ^a 3 |
| MANA 160 | Management of Human Resources 3 |
| MANA electives | Human Resources Management Electives ^b . . . 9 |
| TOTAL. | 21 |

a MATH 060, MATH 164, PSYC 060 or SOCI 060 may be substituted.

b Three courses selected from MANA 155 or 156, MANA 162, MANA 163, MANA 164, MANA 166, MANA 167, MANA 168 or ECON 160.

- A “C” grade or better must be earned in each course.
- 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 (MSHR) degree. For information, consult the Graduate Bulletin or director of the Master's in the Human Resources program at (414) 288-3643.

MINOR IN MARKETING

| REQUIRED COURSES | CREDITS |
|-----------------------|--|
| ECON 043 | Principles of Microeconomics. 3 |
| MANA 028 | Business Statistics ^a 3 |
| MARK 140 | Introduction to Marketing. 3 |
| MARK 142 | Marketing Research 3 |
| MARK electives | Marketing Electives 9 |
| TOTAL. | 21 |

a MATH 60, MATH 164 or PSYC 60 may be substituted.

- A “C” grade or better must be earned in each course.
- The Assistant Dean in the College of Business Administration must approve any transfer of credits.

MINOR IN OPERATIONS AND SUPPLY CHAIN MANAGEMENT

| REQUIRED COURSES | CREDITS |
|-----------------------|--|
| ACCO 030 | Financial Accounting. 3 |
| ECON 043 | Principles of Microeconomics. 3 |
| MANA 028 | Business Statistics ^a 3 |
| MANA 170 | Operations and Supply Chain Management. . 3 |
| MANA electives | Supply Chain Management Electives ^b 9 |
| TOTAL. | 21 |

a INEN 140, MATH 060, MATH 164, PSYC 060 or SOCI 060 may be substituted.

b Three courses selected from MANA 171, MANA 172, MANA 173, MANA 174 or MANA 179.

- A “C” grade or better must be earned in each course.
- The Assistant Dean in the College of Business Administration must approve any transfer of credits.

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.

DECLARATION OF MAJOR

Each business student is required to declare a major prior to registration for the junior year. All students must declare their majors 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.

ABSENCES FROM FINAL EXAMINATIONS

A business administration student who misses a final examination in any course must file a written excuse with the assistant dean in the College of Business Administration office within 48 hours. If the written excuse is approved by the assistant dean, all students enrolled in business administration courses (regardless of their college) with valid and verifiable non-academic excuses may take make-up examinations during a period scheduled by the college the following term. Clearance of X and I grades in all business administration courses is administered by the College of Business Administration. (See also the University section of this bulletin under "Examinations.")

S/U 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 an S or U grade is assigned. Quality of C or higher achievement must be maintained if a grade of S 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 S/U option. No business course may be taken under the S/U 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, BUEX and internship grading courses are graded using the S and U grades and do not fall within the S/U Option.

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. 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 030 and ACCO 031 prior to enrolling in ACCO 120.

GRADE APPEALS AND POLICY PROCEDURES

The college adheres to university policy on grade appeals. Any appeal *must* begin with the teacher 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 associate dean.

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 equal to 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.

ACADEMIC PROBATION AND DISMISSAL

Students in academic difficulty are automatically warned on the grade reports and typically 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 the student will be expected to attain the next term 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.

INDEPENDENT STUDY COURSES

The purpose of an independent study business course (195) 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 quality point average overall and a 3.000 quality 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 195 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 195s must have written approval from the instructor and the department chair.

ADVANCED STANDING STUDENTS

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; credits only 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.

APPROVAL FOR SUMMER SESSIONS STUDY

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 main office. Students must earn a C grade or better in the course in order to be eligible for transfer credit; credits transfer, not the grade.

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 18 credit hours per term.

Request for permission to exceed 19 credit hours must be submitted in writing to the assistant dean prior to registration.

GRADUATION

All graduates are expected to complete the Senior Exit Survey in the month prior to their graduation. All May graduates are required to attend the university and college commencement ceremonies.

SPECIAL ACADEMIC PROGRAMS

BUSINESS INTERNSHIP PROGRAM

The College of Business Administration offers qualified students the opportunity to participate in an 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 quality point average of 2.500 overall, 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 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 full-time 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 career management. Six credit hours earned via internship may be applied to the bachelor of science degree requirements. Contact the college director of career management for information.

PRE-LAW SCHOLARS

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. A typical bachelor's degree program in the College of Business Administration consists of three parts: core curriculum requirements, major requirements and electives. In the first three years of the Pre-law Scholars program, students will complete the core 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. The majors students may choose to pursue are:

- Accounting
- Business Economics
- Finance
- Human Resource Management
- Information Technology
- International Business
- Marketing
- Operations and Supply Chain Management

Note: Students majoring in accounting will need to take two 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.

ACADEMIC STANDARDS FOR PRE-LAW SCHOLARS

Admission to the Pre-law Scholars program is offered only to five incoming first-year students, ordinarily during the spring prior to the first year. Admission guarantees the scholar a

place in Marquette Law School's first-year class of 2007, after completion of the third year of undergraduate studies (and having earned at least 100 credits) in the College of Business Administration. Students will maintain a place in the Law School by fulfilling the following requirements:

- Maintain a minimum cumulative 3.400 Q.P.A. in the undergraduate program.
- Earn a score on the Law School Admissions Test that is equal to or greater than the median score of the class admitted to the Law School in the year before the Scholar's enrollment in the Law School (i.e., the first-year class of 2006). 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.
- 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. The College of Business Administration will base its calculations for academic honors on all credits earned toward the bachelor's degree, including Law School credits needed to total 129 credits.

FINANCIAL AID FOR PRE-LAW SCHOLARS

The financial aid and scholarships Pre-law Scholars receive will be applicable only to the first three years at Marquette. After completing the first three years of undergraduate course work, the student must apply for financial aid and scholarships through the Law School.

STUDENT FINANCIAL AID

While most financial aid is awarded by the Office of Student Financial Aid, a few scholarships are available through the College of Business Administration. Interested students should contact the associate dean of the college. Scholarships are typically available only to prospective juniors and seniors with a cumulative Q.P.A. of 3.0 or better. Applications must be filed in the main office by mid-April for scholarship funds for the coming academic year.

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. This includes the Business Administration Student Council (BASC). 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 GROUP

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.

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.

PROFESSIONAL SOCIETIES

AMERICAN MARKETING ASSOCIATION (AMA)

The American Marketing Association is a national marketing organization of business professionals, educators and students. The chapter provides opportunities to students to interact with their fellow students, academicians, and the business community and to develop a career-oriented objective.

AMERICAN PRODUCTION AND INVENTORY CONTROL SOCIETY (APICS)

The American Production and Inventory Control Society (APICS) is an international professional organization made up of individuals who practice and preach the art and science of Operations and Supply Chain Management. Through the Milwaukee chapter, students interact with local professionals by attending dinner meetings, plant tours, technical sessions, and other related activities.

ASSOCIATION OF INFORMATION TECHNOLOGY PROFESSIONALS (AITP)

The Association of Information Technology Professionals 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.

HUMAN RESOURCES MANAGEMENT ORGANIZATION (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 ASSOCIATION OF STUDENTS IN ECONOMICS AND BUSINESS MANAGEMENT (AIESEC)

AIESEC is an international student-run educational association with the purpose of contributing to the development of member countries and their people with an overriding commitment to international understanding and cooperation. The primary objective is to develop internship opportunities for Marquette students to work abroad.

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.

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.

CURRICULA INFORMATION

FRESHMAN-SOPHOMORE CURRICULUM

| <i>Freshman Year</i> | | | |
|---------------------------------|-----------|---------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| ENGL 001 | 3 | ENGL 002 | 3 |
| MATH 070 | 3 | MATH 071 | 3 |
| THEO 001 or CMST 012 | 2-3 | PHIL 050 | 3 |
| Non-business elective | 3 | Non-business elective | 3 |
| UCCS Elective (HCS or SN) | 3 | UCCS Elective (HCS or SN) | 3 |
| LEAD 001 | 1 | CMST 012 or THEO 001 | 2-3 |
| TOTAL | 15-16 | TOTAL | 17-18 |

| <i>Sophomore Year</i> | | | |
|---------------------------------|-----------|---------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| ACCO 030 | 3 | ACCO 031 | 3 |
| ECON 043 | 3 | ECON 044 | 3 |
| MANA 028 or THEO elective | 3 | MANA 028 or THEO elective | 3 |
| UCCS Elective (LPA or DC) | 3 | UCCS (LPA or DC) | 3 |
| Non-business elective | 3 | PHIL 104 | 3 |
| LEAD 002 | 1 | | |
| TOTAL | 16 | TOTAL | 15 |

BUSINESS ADMINISTRATION AND ROTC

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; more than the 129 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.

COURSE DESCRIPTIONS

ACCOUNTING (ACCO)

Chairperson and Professor: Giacomo

Professor: Probst

Professor Emeritus: H. Loeb, Doney

Associate Professor: Akers, Eaton, Naples, Trebby, Yahr

Assistant Professor: Mascha

Adjunct Assistant Professor: Dole

Adjunct Instructor: C. Gruber, Kren

Lecturer: Griffin, Schlichting

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.

ACCO 030. Principles of Financial Accounting 3 sem. 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. stndg; Computer Literacy

ACCO 031. Principles of Managerial Accounting 3 sem. 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 030; Computer Literacy

ACCO 105. Intern Grading Period in Accounting 3 sem. hrs.

Prereq: Enrolled in Business Administration and Jr. stndg. and Consent Required; Consent of Internship Director. S/U grade assessment.

ACCO 110. Accounting Communications 3 sem. 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 120.

ACCO 120. Intermediate Accounting 3 sem. 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 031; Computer Literacy

ACCO 121. Advanced Accounting 1 3 sem. 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 120.

ACCO 122. Advanced Accounting 2 3 sem. hrs.

Business combinations through acquisitions of net assets or common stock. Construction of consolidated financial statements, including analysis of intercompany transactions. International accounting issues. Accounting for state and local governments and not-for-profit organizations. *Prereq:* ACCO 121.

ACCO 132. Cost Accounting 3 sem. 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 120.

ACCO 133. Auditing Principles and Procedures 3 sem. hrs.

Philosophy, concepts and techniques used by independent auditors. Professional ethics and legal relationships. Study and evaluation of internal control. Audit program applications. Statistical sampling and EDP auditing. Reporting obligations and options. *Prereq:* ACCO 121.

ACCO 134. Individual Income Taxation 3 sem. 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. stndg. and ACCO 120.

ACCO 135. Taxation of Corporations, Partnerships and Trusts 3 sem. hrs.

Partnership, fiduciary, and corporation income tax laws studied for proper treatment of various types of income, deductions, the consequences of ownership interests, and the application of various tax rates to taxable situations. Survey of administrative procedure for protests, refunds and of gift and estate taxes. *Prereq:* ACCO 120.

ACCO 140. Analysis of Financial Statements 3 sem. hrs.

The primary objective of the course is to provide experience in reading, interpreting, and analyzing corporate financial statements. The

course also integrates finance theory relative to the importance and value of accounting information. 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. The effects of alternative accounting methods and footnote disclosures are important ingredients in these analyses. Course requirements stress the ability to write both cases and reports that summarize the various analyses and conclusions. *Prereq:* Sr. stndg. and ACCO Major; or Sr. stndg. and FINA major.

ACCO 141. International Accounting 3 sem. hrs.

The primary objective of the course is to provide an overview of managerial and financial accounting issues faced by multinational corporations or firms involved in international business. These 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. These topics are viewed from the perspective of companies based in the United States that operate in diverse business environments throughout the world. Some specific countries are analyzed to provide contrasts and comparisons in these areas. Course requirements stress the ability to write both cases and reports some of which require use and analysis of foreign company financial statements. *Prereq:* ACCO 031.

ACCO 142. Tax Research Seminar 3 sem. 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. stndg. and ACCO 134.

ACCO 143. Accounting Theory 3 sem. hrs.

Analysis of theoretical structure underlying financial accounting. Emphasis directed toward its development from both nominative and descriptive approaches. Coverage includes relation of accounting theory to basic financial statements and to selected topical areas. *Prereq:* Sr. stndg. and ACCO major.

ACCO 144. Accounting Information Systems 3 sem. hrs.

Examines most of the information systems knowledge components, required of entry-level accountants, by the AICPA, IIA and IMA. Hands-on projects, using data base management software, and accounting systems software, reinforce understanding of the knowledge components. Coverage includes: systems theory, analysis and design of computer-based

accounting systems, various approaches to computerizing accounting data, data modeling, data base management systems, internal control, computer crime, management fraud, end-user computing, networks and role of the information technology function in organizations. *Prereq: ACCO 120.*

ACCO 145. Advanced Cost Accounting
3 sem. hrs.

This course is designed to develop an understanding of accounting as a financial information system. Cost accounting is designed to structure financial information so as to assist management in decision-making. As a result, this course has a decision-orientation which is important for students who seek careers in either profit-motivated or not-for-profit organizations. *Prereq: ACCO 132.*

ACCO 146. Governmental Accounting
3 sem. hrs.

Study of accounting principles for governmental and not-for-profit sector and the related financial reporting and disclosure requirements. Examination of objectives of financial reporting for these entities and the theoretical structure underlying these principles. Coverage of current and pending GASB and FASB pronouncements. *Prereq: Sr. stndg. and ACCO 121.*

ACCO 147. International Taxation 3 sem. hrs.
Study of taxation issues facing American companies carrying on business outside the country, as well as those issues for foreign companies conducting business in the United States. *Prereq: ACCO 135.*

ACCO 195. Independent Study 1-4 sem. hrs.
Prereq: cons. of dept. ch.

BUSINESS LAW COURSES (BULA)

BULA 127. Legal Environment of Business
3 sem. 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. stndg.*

BULA 128. Business Law 3 sem. 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 127.*

BULA 132. The Legal and Regulatory Environment of International Business
3 sem. 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 multi-national 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. stndg.*

ECONOMICS (ECON)

Chairperson and Associate Professor: McGibany
Professor: Brush, Chowdhury, Davis, Nourzad, Smiley
Professor Emeritus: Danner
Associate Professor: Breeden, Clark, Crane, Daniels, Tomanoff
Associate Professor Emeritus: Trestrail
Assistant Professor: Wang
Visiting Assistant Professors: Habermalz
Adjunct Assistant Professor: Lephardt
Lecturer: Kohls

▲ECON 020. Introduction to Economics
3 sem. 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 043. Principles of Microeconomics
3 sem. 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 044. Principles of Macroeconomics
3 sem. 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 043.*

ECON 105. Intern Grading Period in Economics 3 sem. hrs.

Prereq: Jr. stndg. and Consent Required; S/U grade assessment. Consent of Internship Director.

ECON 108. Applied Business Economics
3 sem. 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 108 and ECON 110 for credit. *Prereq: ECON 043 and ECON 044 and MANA 028 or equivalent.*

ECON 110. Applied Microeconomic Analysis
3 sem. 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 043 and ECON 044 and MATH071 or equivalent; Students may not take both ECON 108 and ECON 110 for credit.*

ECON 120. Intermediate Macroeconomic Analysis 3 sem. 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. Offered annually. *Prereq: ECON 043 and ECON 044 and MATH 071 or equivalent.*

ECON 125. American Business History
3 sem. hrs.

Survey of the development of American business from the Colonial era to the present. Industries and individual firms will be examined as well as entrepreneurs and their role in the development of American business, and the role of governments in the development of American businesses. *Prereq: ECON 043 and ECON 044.*

ECON 126. American Economic History
3 sem. hrs.

Briefly surveys the pre-1900 development of the American economy and then examines 20th Century changes in the agricultural, manufacturing, transportation, finance, and trade and communications sectors. Prosperity and depression in the 1920 to 1940 period will be examined in depth. Concludes with an examination of the distribution of income and wealth and the changing role of government in the 20th century American economy. *Prereq: ECON 043 and ECON 044.*

ECON 134. Public Policies Toward American Industry 3 sem. 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 043 and ECON 044.*

ECON 145. Public Finance 3 sem. hrs.
Examination of such current topics as the growth of government spending, taxes, and deficits. Proper role of the state, centralization and decentralization, the impact of government decisions on the distribution of income and the

efficient allocation of resources. *Prereq: ECON 043 and ECON 044.*

ECON 146. Urban Economics 3 sem. hrs.
Economic role of cities. Forces behind urban growth. Problems of central city economic decline and urban poverty. Urban land and housing markets. Suburbanization of employment and population. The urban fiscal crisis. *Prereq: ECON 043 and ECON 044.*

ECON 150. Money, Banking, and Monetary Policy 3 sem. 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 043 and ECON 044.*

ECON 151. International Economic Issues 3 sem. 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 043 and ECON 044; Credit not given if ECON 154 or ECON 156 is already completed for credit.*

ECON 154. International Currency Markets 3 sem. 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 043 and ECON 044.*

ECON 155. Comparative Economic Development 3 sem. 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 043 and ECON 044.*

ECON 156. International Trade 3 sem. 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 043 and ECON 044.*

ECON 160. Economics of Labor Markets 3 sem. 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 043 and ECON 044.*

ECON 163. Environmental and Natural Resource Economics 3 sem. 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 043 and ECON 044.*

ECON 174. Introduction to Mathematical Economics 3 sem. 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 043 and ECON 044 and MATH070 or equivalent and MATH071 or equivalent.*

ECON 175. Introduction to Econometrics 3 sem. 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 043 and ECON 044 and MATH060 or equivalent; or ECON 043 and ECON 044 and MANA 028 or equivalent.*

ECON 181. Economics and Ethics 3 sem. hrs.
Interaction of economic principles and understanding with ethical principles and understanding in contemporary society. Analysis of affluence's impacts on character development, the practice of moderation and justice, and the meaning of spiritual poverty. Applications of this ethic to critical features of modern industrial society. *Prereq: ECON 043 and ECON 044 and PHIL 104.*

ECON 182. Economics and Law 3 sem. 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 043 and ECON 044.*

ECON 195. Independent Study 1-4 sem. hrs.
Prereq: cons. of dept. ch.

ECON 196. Undergraduate Seminar 3 sem. hrs.
Specific titles to be announced in the *Timetable of Classes*. Offered occasionally. *Prereq: Jr. stndg. and ECON 043 and ECON 044.*

ECON 199. Senior Thesis 2 sem. hrs.
With department approval. Seniors may write a thesis under direction of an adviser. *Prereq: cons. of dept. ch.*

FINANCE (FINA)

Chairperson and Associate Professor: Kutner
Professor: Eppli
Associate Professor: Hunter, Seifert
Assistant Professor: DeWally, Peck, Prucyk
Lecturer: Blonski, Lohre, Rebholz, Zellmer

FINA 081. Personal and Professional Finance 3 sem. hrs.
Course considers the financial planning and management needs men and women regularly have in the conduct of their personal and professional lives. Topics covered relate to management of personal and household finances, such as budgeting, credit buying, banking and borrowing, taxation, home ownership. Also focuses on financial issues relating individuals to an employer, a personal business, or a professional practice: selection and evaluation of fringe benefits, accounting and taxation of professional income. Personal and professional insurance decisions. Savings, investment and tax planning for estate accumulation and retirement. Support capabilities in microcomputer technology are illustrated and discussed. Available for elective credit to non-business majors in the health sciences, arts and sciences or other areas. Available only to students not enrolled in Business Administration.

FINA 105. Intern Grading Period in Finance 3 sem. hrs.
Prereq: Enrolled in Business Administration and Jr. stndg. and Consent Required; S/U grade assessment. Consent of Internship Director.

FINA 110. Real Estate Fundamentals 3 sem. hrs.
Fundamentals and significance of real property, particularly the growth of communities. Analysis of principal legal concepts pertaining to location, financing, and environmental factors. Causes of growth factors. *Prereq: Jr. stndg.*

FINA 112. Real Estate Valuation and Financing 3 sem. hrs.
Basic techniques of evaluation and appraisal of residential, commercial, and industrial real estate. Fundamentals of real estate development including market studies, legal and infrastructure requirements and property management. Financing techniques including syndications and securizations. *Prereq: FINA 180.*

FINA 180. Introduction to Financial Management 3 sem. hrs.
Principles and methods of corporate finance, valuation, analysis and management. Planning and controlling funds for liquidity and profitability. Introduction to the financial markets and instruments available to corporations and individuals. Emphasis placed on the framework and methodology involved in financial decision

making. *Prereq:* Jr. stndg. and ACCO 031 and MANA 026; or Jr. stndg. and ACCO 031 and MANA 028.

FINA 181. Investment Analysis 3 sem. 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 180.

FINA 182. Investment Management
3 sem. hrs.

Extends the concepts introduced in FINA 181. 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 181.

FINA 183. Advanced Financial Management
3 sem. 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 180.

FINA 184. Personal Finance Planning
3 sem. hrs.

Introduction to the framework and tools for preparing personal financial plans. Personal financial planning is a dynamic planning process projecting, and reflecting, the major financial events in individual lives. These events include the financial implications of career choice, major asset purchases, managing liabilities, determining insurance needs, developing investment portfolios, and a retirement plan, and estate planning. Financial planning is based upon setting financial goals and is developed in the context of government policies and the economic environment. *Prereq:* FINA 180.

FINA 185. International Finance 3 sem. 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 180.

FINA 186. Bank Management 3 sem. 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 180.

FINA 187. Cases in Financial Management
3 sem. hrs.

The application of the principles and models of financial management through case analysis and discussion; forecasting of financing needs for future operations and growth; financial policy and fund sources. Support of financial decision making through computerized planning and modeling. *Prereq:* Sr. stndg. and FINA 183.

FINA 188. Introduction to Financial Derivatives 3 sem. 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 180.

FINA 189. Issues in Finance 2-3 sem. hrs.
Specific titles announced in the *Timetable of Classes*. *Prereq:* FINA 180.

FINA 190. Principles of Risk and Insurance
3 sem. hrs.

Insurance and the method of handling risk, including risk retention, prevention, transfer, and the economic significance in regulation of property, liability, marine, life, health, and social insurance. *Prereq:* FINA 180.

FINA 195. Independent Study 1-4 sem. hrs.
Prereq: cons. of dept. ch.

FINA 197. Colloquium in Finance
1-3 sem. hrs.

Readings and research in restricted fields to learn and to apply techniques and disciplines of research in the finance area. *Prereq:* Consent of finance faculty.

MANAGEMENT (MANA)

Chairperson and Professor: Cotton
Professor: T. Bausch, Keaveny
Professor Emeritus: Martin
Associate Professor: Inderrieden, Kaiser, D. Kim, Maranto, Rehbein, Srivastava, Stewart, Syam
Associate Professor Emeritus: McElroy
Assistant Professor: Adya, Blumentritt, Cotteleer, Cule, Danis, Griffin, Y. Kim, Konz, O'Neill, Willis
Adjunct Instructor: Ennis, Rau, Schwiesow, Voelker
Adjunct Assistant Professor: Collins
Lecturer: Bell, Fousek, Kern, Kleinmann, Muraski

MANA 025. Introductory Business Statistics
3 sem. hrs.

Introduction to statistical methods used in the analysis of business decisions. Covers descriptive statistics, including index numbers, and 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 of means and variances. Use of chi-square distribution in testing goodness-of-fit and contingency tables. *Prereq:* MATH070 or equivalent and MATH071 or equivalent; Computer Literacy

MANA 026. Intermediate Business Statistics
3 sem. hrs.

Continued development of statistical methods used in the analysis of business decisions. Covers analysis of variance, including factorial

experiments. Develops bivariate linear regression and correlation, with tests of significance. Covers multiple regression, including an introduction to qualitative variables. Includes time series analysis and general forecasting approaches. May include introductory treatment of nonparametric statistics, decision theory, or Bayesian statistics. *Prereq:* MANA 025 or equivalent.

MANA 028. Business Statistics 3 sem. 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:* MATH070 or equivalent and MATH071 or equivalent; *Prerequisite:* Computer literacy

MANA 105. Intern Grading Period in Human Resources 3 sem. hrs.

Prereq: Enrolled in Business Administration and Jr. stndg. and Consent Required; S/U grade assessment. Consent of Internship Director.

MANA 106. Intern Grading Period in Information Technology 3 sem. hrs.

Prereq: Enrolled in Business Administration and Jr. stndg. and Consent Required; S/U grade assessment. Consent of Internship Director.

MANA 107. Intern Grading Period in Entrepreneurship 3 sem. hrs.

Prereq: Enrolled in Business Administration and Jr. stndg. and Consent Required; S/U grade assessment. Consent of Internship Director.

MANA 108. Intern Grading Period in Operations and Supply Chain Management 3 sem. hrs.

Prereq: Enrolled in Business Administration and Jr. stndg. and Consent Required; S/U grade assessment. Consent of Internship Director.

MANA 120. Introduction to Information Technology 3 sem. 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:* Enrolled in Business Administration and Jr. stndg. and BUEX001; or Enrolled in Business Administration and Jr. stndg. and BUEX002.

MANA 121. Business Applications Program Development 3 sem. 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: Enrolled in Business Administration and Jr. stndg.*

MANA 122. Data Base Management Systems
3 sem. 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: Enrolled in Business Administration and Jr. stndg.*

MANA 124. Telecommunications
3 sem. hrs.

An overview of the essential elements of connectivity and client/server designs. Topics include: media, network configuration, efficient resource allocation, communication carrier industry, video conferencing and applications in groupware, electronic data interchange (EDI), Internet applications, electronic commerce opportunities and limitations, preliminary CNE qualifications, and World Wide Web page development. Methodology may consist of case analyses, expert speakers, field trips and projects. *Prereq: Enrolled in Business Administration and Jr. stndg.*

MANA 126. Information Systems Analysis
3 sem. hrs.

Covers the early stages of the systems development life cycle. Focus is on derivation of logical system specifications from information needs. Topics include: problem formulation, requirements definition, JADS, RADS, data flow diagrams, the role of the systems analyst, data and process modeling, techniques for investigation, logical system design, tools for system representation, business process reengineering (BPR), and cost/benefit analysis. Students will begin on a project that will continue in Information Systems Design and Implementation. *Prereq: MANA 120.*

MANA 127. Information Systems Design and Implementation 3 sem. hrs.

Covers the principles, techniques and problems involved in the design of information technology. Focus is on the transformation of logical systems specifications to a working prototype. Detailed study of information systems outputs, files, inputs, controls, terminal dialogues, procedures, documentation, program specifications, hardware and software selection, testing, system implementation and system maintenance.

Students will continue the project begun in Information Systems Analysis: systems development tools will be used. *Prereq: MANA 122 which may be taken concurrently and MANA 126.*

MANA 128. Advanced Business Applications Program Development
3 sem. hrs.

Programming minicomputer and PC environment; traditional file processing and object-oriented techniques; emphasis on techniques of resource allocation; appropriate methodologies for systems design. Course will be taught using different development environments from COBOL, Visual BASIC, Java, C++, Delphi, etc. *Prereq: MANA 121.*

MANA 129. Issues in Information Technology 1-4 sem. hrs.

Varied subject matter each time offered. In-depth exposure to relevant selected topics. *Prereq: Jr. stndg.*

MANA 150. Understanding Entrepreneurship
3 sem. hrs.

An overview of current theory and research on entrepreneurial phenomena. Material from economics, organizational science, psychology, political science, sociology, and public policy will be used to explore conceptions of entrepreneurship, entrepreneurial career choices, new firm foundings, new firm survival and success, effects of social context on entrepreneurship, and the impact of public policy. *Prereq: Jr. stndg.*

MANA 151. New Venture Creation 3 sem. 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: Jr. stndg.*

MANA 154. Negotiations and New Ventures
3 sem. 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 155. An Introduction to Diversity in Organizations 3 sem. 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 156. Behavior and Organization
3 sem. 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 158. Motivation and Leadership
3 sem. 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 156.*

MANA 159. Issues in Organizational Management 1-4 sem. hrs.

Varied subject matter each time offered. In-depth exposure to relevant selected topics. Offered occasionally. *Prereq: Jr. stndg.*

MANA 160. Management of Human Resources 3 sem. 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.*

MANA 162. Employee Benefit Systems
3 sem. 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: MANA 160.*

MANA 163. Compensation of Human Resources 3 sem. 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 025 and*

MANA 160; May be taken for graduate credit by students enrolled in Master of Science in Human Resources with appropriate additional assignments.

MANA 164. Labor Relations and Collective Bargaining 3 sem. 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.

MANA 166. Employment of Human Resources 3 sem. 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 028 and MANA 160.*

MANA 167. Training and Development 3 sem. 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: MANA 160; May be taken for graduate credit by students enrolled in Master of Science in Human Resources with appropriate additional assignments.*

MANA 168. Issues in Human Resources 1-4 sem. hrs.

Varied subject matter each time offered. In depth exposure to relevant selected topics. Offered occasionally. *Prereq: Jr. stndg.*

MANA 170. Operations and Supply Chain Management 3 sem. 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 028.*

MANA 171. Manufacturing Management 3 sem. 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: MANA 170.*

MANA 172. Service Management 3 sem. 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: MANA 170.*

MANA 173. Quality and Process Management 3 sem. 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: MANA 170.*

MANA 174. Logistics and Purchasing Management 3 sem. 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: MANA 170.*

MANA 176. Management Science 3 sem. hrs.

Introduction to the methods of management science operations research with applications to problems in business decision making. Topics include linear programming, transportation and assignment model, integer programming, queuing models, simulation decision theory and CPM/PERT. *Prereq: MANA 025.*

MANA 179. Issues in Operations and Supply Chain Management 1-4 sem. hrs.

Varied subject matter each time offered. In depth exposure to relevant selected topics. Offered occasionally. *Prereq: Jr. stndg.*

MANA 181. Business and Its Environment 3 sem. 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 182. Business Policies 3 sem. 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 110 and FINA 180 and MANA 156 and MANA 170 and MARK 140; MANA 181 is NOT a prerequisite.*

MANA 183. International Management 3 sem. 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 195. Independent Study 1-4 sem. hrs.

Prereq: cons. of dept. ch.

MARKETING (MARK)

Chairperson and Associate Professor: Akhter
Professor: Andrews, Durvasula, Lacznia, Lysonski
Professor Emeritus: Brownlee
Associate Professor: Bauer, Garrett, Robinson
Assistant Professor: Simmons
Instructor: Terrian
Lecturer: Barrett, Grede, McDonald, Peterson, Stevlingson, Voell

MARK 105. Intern Grading Period in Marketing 3 sem. hrs.

Prereq: Enrolled in Business Administration and Jr. stndg. and Consent Required; S/U grade assessment. Consent of Internship Director.

MARK 140. Introduction to Marketing 3 sem. hrs.

The marketing process as it relates to management of marketing in the profitable operation of the firm. Environmental constraints, including consumers' needs, governmental regulation, and the social environment. Price determination, promotional strategy, channels of distribution, and product development. *Prereq: Jr. stndg. and ECON 043.*

MARK 142. Marketing Research 3 sem. hrs. Methods and techniques of securing, analyzing, and interpreting data essential to the scientific solutions of marketing problems. Research planning, research design, data collection methods, sampling analysis, report writing and the integration of research and marketing management. *Prereq: MANA 026 and MARK 140; or MANA 028 and MARK 140.*

MARK 143. Integrated Marketing Communications 3 sem. hrs.

Marketing aspects of communication between the firm and its customers. Brief introduction to behavioral sciences as they apply to promotion. Advertising, personal selling, publicity, and sales promotion as components of the promotional mix. Treatment of the social and legal constraints of promotion. *Prereq: MARK 140.*

MARK 144. Marketing Logistics and Distribution Strategy 3 sem. 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. Offered occasionally. *Prereq: MARK 140.*

MARK 145. Product and Pricing Strategy 3 sem. 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 140.*

MARK 146. Consumer Behavior 3 sem. hrs.
Behavioral science concepts, including motivation, perception, learning, personality, attitudes, culture, social class, reference groups, and the family unit. Application of behavioral concepts to marketing management and research problems, including diffusion of innovation, cognitive dissonance, brand loyalty, attitude change, and comprehensive consumer decision models.
Prereq: MARK 140.

MARK 148. Sales Management 3 sem. 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 140.

MARK 150. Marketing Management
3 sem. hrs.
Planning, implementation and control of the marketing activity of firm or division. Formulation of marketing objectives, policies, programs, and strategy. Managerial aspects of product, price, promotion, and distribution decisions. *Prereq: Sr. stndg. and MARK 140 and MARK 142; One other MARK course required as prerequisite.*

MARK 152. Retailing Management
3 sem. 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. Offered occasionally.
Prereq: MARK 140.

MARK 153. International Marketing
3 sem. hrs.
Adapting business efforts to differing economic, social, and cultural milieus and the development and application of marketing strategies and mixes in foreign markets. Differing methods of international trade, marketing, and business organization are covered. *Prereq: MARK 140.*

MARK 155. Business-to-Business Marketing
3 sem. hrs.
Focus on applying marketing in the industrial product and services environment. Emphasis is placed on application of strategic planning models to industrial markets and development of marketing mixes especially oriented to industrial products/services. *Prereq: MARK 140.*

MARK 156. Direct Marketing 3 sem. 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 028 and MARK 140.*

MARK 157. Marketing and Society
3 sem. hrs.
Focuses on environments external to the firm which have significant consequences on marketing and demonstrates how the marketing system contributes to or impedes the objectives of society. Topics discussed: Consumerism, Law, Marketing Ethics, Ecology, Marketing in Non-Profit Organizations. Offered occasionally.
Prereq: MARK 140.

MARK 159. Issues in Marketing 1-4 sem. hrs.
Enrollment limited to superior students. Offered occasionally with various topics.
Prereq: MARK 140.

MARK 195. Independent Study 1-4 sem. hrs.
Prereq: cons. of dept. ch.

SPECIAL PROGRAMS:

BUSINESS EXPERIENCE (BUEX)

Program Director: Terrian

Course Coordinators: Brennan, Terrian

Performance in all BUEX courses is assessed using S and U grades.

BUEX 002. Computer Literacy in Business 0 sem. hrs.

Introduction to university computer system and resources. On-line 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 Consent Required; Consent of Assistant Dean.

BUEX 101. Career Planning 1 sem. hr.
Personal and business, short-term and long-term, and practical and theoretical aspects of personal career planning. Lectures, readings, written assignments and guest speakers will make up the class. Preparation for seeking employment will include resume preparation and interviewing skills. Exploration of career alternatives and expectations will also be included. *Prereq:* Enrolled in Business Administration and Jr. stndg; or Enrolled in Business Administration and Sr. stndg; S/U grade assessment.

BUEX 110. Internship Work Period
0 sem. hrs.
Registration in this course indicates that the student is on full-time internship, approved by the College of Business Administration. Credits are earned in the subsequent term by registering for the internship-grading course in the respective major. *Prereq:* Enrolled in Business Administration and Jr. stndg. and 2.5 MU QPA and Consent of Program Director; Fee

BUEX 111. Junior Achievement-Applied Management 3 sem. hrs.
Student serves as a member of the Board of Directors along with business professionals, advising a Junior Achievement firm consisting of high school students as they organize, incorporate, capitalize, choose and market a product, and eventually liquidate the firm. The Junior Achievement experience will also be supplemented with the Business Basics Program: teaching an Introduction to Business course to elementary students. *Prereq:* Enrolled in Business Administration and Jr. stndg; S/U grade assessment.

BUEX 115. Small Business Institute
1-3 sem. hrs.
Supervised development of a management consulting project with a small business firm. Projects include analysis of marketing, production, finance, accounting, or economics problems and submission of a written project report. *Prereq:* Jr. stndg. and Consent of Program Director; S/U grade assessment.

BUEX 189. Business and the Non-Profit Sector 1-3 sem. hrs.

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. *Prereq:* Enrolled in Business Administration and Jr. stndg. and cons. of instr.; S/U grade assessment.

INTERNATIONAL BUSINESS (INBU)

Program Director: Hosseini

INBU 100. International Study in Business
0 sem. hrs.
Prereq: Consent of Program Director; Approved for full-time study at another college/university abroad, but will NOT be certified as full-time by Marquette University.

INBU 105. Intern Grading Period in International Business 3 sem. hrs.
Prereq: Consent of Program Director and Consent Required; Consent of International Business Director and College Internship Director. S/U grade assessment.

INBU 181. Travel and Study Abroad in International Business 3 sem. hrs.
Prereq: Consent Required; Consent of International Business Director.

INBU 189. Seminar in International Business
3 sem. hrs.
Specific titles to be announced in *Timetable of Classes*. *Prereq:* Jr. stndg.

INBU 190. Business Administration Undergraduate International Exchange
0 sem. hrs.
Prereq: Approval by College of Business Administration.

INBU 191. Study at St. Clare's College
0 sem. hrs.
Prereq: Approval by College of Business Administration, student's college adviser, and student's college office if not a Business Administration student.

INBU 192. Business Administration Affiliated Study Abroad Program
0 sem. hrs.
Prereq: Consent Required; Consent of Director of International Business Studies.

INBU 195. Independent Study 1-3 sem. hrs.
Prereq: Consent Required; Consent of International Business Director is a prerequisite of this course.

INBU 196. International Business Elective
1-4 sem. hrs.
Prereq: Consent Required; consent of assistant dean.

LEADERSHIP (LEAD)

Program Directors: Garrett, Terrian
Performance in all LEAD courses is assessed using S and U grades.

LEAD 001. Foundations for Business Leadership 1 sem. 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. *Prereq:* Enrolled in Business Administration; *Prerequisite:* First semester freshman S/U grade assessment.

LEAD 002. Developing Critical Skills for Business Leadership 1 sem. hr.

This course concentrates on providing undergraduate business students with information and training in critical skill development areas such as written and verbal communication, leadership skills, diversity awareness, and teamwork training. In addition, this course provides students with information concerning evolving trends in the business world such as the increasingly global nature of business and the growing influence of technology. In addition, the opportunities for and benefits of international study are explored. *Prereq:* Enrolled in Business Administration and Soph. stndg. and LEAD 001; S/U grade assessment.

LEAD 103. Applying Business Leadership Skills 1 sem. hr.

This course focuses on students developing their business skills and knowledge in the applied business world. Emphasis is placed on internship opportunities, mentoring with business executives, involvement with professional organizations, and volunteer activities. *Prereq:* Enrolled in Business Administration and Jr. stndg. and LEAD 002; S/U grade assessment.

LEAD 104. Strategies for Entering the Business World 1 sem. hr.

This course provides senior-level undergraduate business students with the required information and skills to make a successful transition into the professional world of business. Strategies for effective career planning are emphasized in such areas as employer analysis, interviewing skills and resume writing. In addition, options for graduate education in business are thoroughly discussed, including the potential benefits and costs. *Prereq:* Enrolled in Business Administration and Sr. stndg. and LEAD 103; S/U grade assessment.

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College of Communication

Students in the College of Communication develop knowledge and skills leading to professional careers in communication and performing arts. The University Core of Common Studies and additional courses taken in the arts and sciences provide College of Communication students with general knowledge about human behavior, faith and culture. This broad-based learning is necessary for responsible citizenship in a constantly changing world.

The college stresses the integration of theory with practice through student work opportunities in our various Student Media outlets and through professional internships. Our many clubs and student activities provide students with the opportunity to develop leadership skills that will provide the foundation for continued intellectual and professional development. The college emphasis on community service and ethical learning helps to prepare our graduates to serve the cause of social justice throughout their careers.

DEGREES OFFERED

Marquette University confers the degree of bachelor of arts on those students who have satisfactorily completed the following majors: advertising, broadcast and electronic communication, communication studies, journalism, public relations, theatre arts, and the teaching majors in communication studies, journalism and theatre arts. Students enrolled in the Honors Program who successfully complete that program may receive an honors bachelor of arts.

The College of Communication offers programs leading to the master of arts degree. Students may choose to focus their program in advertising and public relations, broadcast and electronic communication, communication studies, journalism, mass communication, religious communication, or science, health and environmental communication. The college also offers a certificate program in professional communication. For information regarding the master's degree or the certificate, please see the *Graduate Bulletin*.

MAJORS/MINORS OFFERED

These majors are offered by the College of Communication: advertising, broadcast and electronic communication, communication studies, journalism, public relations, theatre arts, plus majors leading to secondary teaching certification in communication studies, journalism, and theatre arts. The available minors are: advertising, broadcast and electronic communication, communication studies, film, public relations, theatre arts, and teaching minors in communication studies, journalism and theatre arts.

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.

ADMISSION REQUIREMENTS

Freshman Admission: Freshmen applicants to the College of Communication are expected to fulfill the admission requirements listed in the University section of this bulletin.

Admission with 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 previous college work for consideration. An applicant's entire academic performance will be evaluated in making an admission decision.

Students planning to major in an education sequence must contact the School of Education for separate admission requirements.

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 quality point average "C"). Normally 32 hours of credit in upper-division courses must be presented by candidates for a degree. Students majoring in advertising, broadcast and electronic communication, journalism and public relations may not exceed 48 credits in any combinations of those courses excluding certain exempt courses. A student taking more than 48 credits in these areas will have to add a similar number of credits beyond the 128 needed to graduate.

GENERAL DEGREE REQUIREMENTS:

Candidates for the baccalaureate degree must complete a minimum of 128 credit hours including the following requirements:

| <i>Area</i> | <i>Credit Hours</i> |
|---|---------------------|
| University Core of Common Studies | 36 |
| College of Communication Curriculum | 27-35 |
| Communication | 12 |
| Foreign Language | 0-8 |
| History | 3 |
| Literature | 6 |
| Logic | 3 |
| Social Science | 3 |
| Major | 32-40 |

UNIVERSITY CORE OF COMMON STUDIES (UCCS) 36 CREDITS

See the University Core of Common Studies section of this bulletin.

EXAMINING THE WORLD:

- 6 cr Rhetoric (R)
- 3 cr Mathematical Reasoning (MR)

ENGAGING THE WORLD

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

EVALUATING THE WORLD

6 cr Human Nature and Ethics (HNE)

6 cr Theology (T)

▲ Indicates UCCS courses throughout the bulletin.(Note: Please consult the Core of Common Studies Web site at www.marquette.edu/core for an updated list of approved core courses.)**COLLEGE OF COMMUNICATION CURRICULUM 27-35 CREDITS**

The 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 College of Communication thereby extends the student's core of common studies experiences, and focuses further learning in pursuit of a specialized degree. Communication students are required to take the following courses:

3 cr CMST 010 Introduction to Communication

3 cr COMM 011 Contemporary Presentation*

3 cr COMM 020 Media in Society

3 cr COMM 021 Intro to Visual Communication or THAR 050 Theatre Appreciation#

6 cr LITERATURE

0-8 cr FOREIGN LANGUAGE: 001 and 002 or placement

3 cr HISTORY

3 cr PHIL 001 Logic

3 cr SOCIAL SCIENCE

*fulfills UCCS Rhetoric (R) requirement

#fulfills UCCS Literature/Performing Arts (LPA) requirement

COMMUNICATION REQUIREMENT

All students must complete CMST 010 – Introduction to Communication, COMM 011 – Contemporary Presentation, COMM 020 – Media in Society and one course from COMM 021 – Introduction to Visual Communication or THAR 050 – Theatre Appreciation. THAR 050 will also fulfill the UCCS Literature/Performing Arts requirement.

FOREIGN LANGUAGE REQUIREMENT

All students must demonstrate one-year college competency in a foreign language. This may be accomplished by placement or course work.

Students who have never studied a foreign language or who wish to pursue a new language must take levels 001 and 002 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 the achieved score, students will be placed in the appropriate language course. Students who are placed at the intermediate level (003 or 010), or at a higher level, are exempt from the foreign language requirement. Students placed in 009 need only complete this one course to satisfy the foreign language requirement. 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 Web site at www.marquette.edu/foia.

HISTORY

In addition to the UCCS requirement, students are required to complete another three history courses from the Department of History for nine credits.

LITERATURE

All students must complete six credit hours in either English literature or foreign language literature (original or in translation).

LOGIC

All students must complete PHIL 001 – Logic

SOCIAL SCIENCE

In addition to the UCCS requirement, students are required to complete three credits of a social science elective offered through the Departments of Social and Cultural Sciences, History, Political Science, Psychology or Economics. ARSC 140, EDUC 078 and EDUC 088 can also be used to fulfill this requirement.

MAJOR

See 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.

REQUIREMENTS FOR EDUCATION MAJORS

In addition to completing at least one academic major, students intending to complete a teacher-preparation program, elementary/middle school or middle school/secondary, through the School of Education must also meet the requirements of the College of Communication, adjusted to meet graduation and licensure requirements. These curriculum requirements are very specific and require that students seeking to complete the program in four years plan their course work very carefully under the supervision of an academic adviser in the School of Education. Students who intend to complete a teacher-preparation program through the Marquette School of Education should contact the Office of Teacher Education as early as possible, and should carefully study the School of Education section of this bulletin.

Students interested in *elementary/middle school education* are required to complete a *regular academic major*. Students interested in *middle school/secondary education* must complete at least one *teaching major* (communication studies, theatre arts or journalism) to be eligible for Wisconsin licensure. A teaching minor alone is not sufficient for license eligibility, but as a supplement to a teaching major could lead to licensure in additional areas. Students at either the elementary/middle or middle/secondary level must also complete the appropriate professional education sequence to be eligible for a Wisconsin teacher's license. Further information can be found under Curricula Information in the School of Education section of this bulletin.

ACADEMIC REGULATIONS

Students in the College of Communication are expected to comply with the academic requirements and regulations listed in the University section of this bulletin.

ACADEMIC DISHONESTY

The college adheres to 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 College of Communication. Cheating, plagiarism, unapproved collaboration, or falsifying work in whole or in part are infractions that can result in failure in the assignment or course or even dismissal from the college.

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

Courses in this college often include performance under the guidelines and supervision of faculty and staff in classroom, theatre, studio, laboratory 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 and can result in university censure. When a student is reported to have been excessively absent from class, the penalty of being withdrawn from the class with a grade of WA—withdrawal due to excessive absences—may be imposed. Majors in this college are bound by these expectations in each course they take, in each college in which they take courses.

Attendance policies will be announced by individual teachers in their syllabi and in their first class meetings. Each student is responsible for understanding the absence regulations in effect in each course and is bound by the regulations and policies for that course and/or college. As a general norm, a student may, for serious reasons, be excused from four 75-minute periods or from six 50-minute periods in a three-credit course or from four 50-minute periods in a two-credit course or from eight 50-minute periods in a four-credit course.

APPROVAL FOR SUMMER SESSION STUDY AT OTHER INSTITUTIONS

Students who plan to take course work during the summer at other institutions are strongly urged to obtain college approval before enrolling. Approval will be based on 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 Web site 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.

CD AND D GRADES

CD grades in courses offered by the College of Communication will be accepted towards majors and minors offered by the College of Communication providing that the student has a 2.000 quality point average in the major or minor. Grades of D do not normally fulfill the credit hour requirement for the major or minor in the College of Communication. Students who receive a D in a College of Communication major or minor course should contact the department in which the grade was received. The department chair will make a recommendation whether the course can be accepted in the major/minor, if the course should be repeated or if a substitute course should be taken. Likewise, 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 will be given only once for courses that are repeated. See the University section of this bulletin for additional information regarding repeated courses.

PROFESSIONAL STANDARDS

All papers produced by students in all classes under the jurisdiction of the College of Communication are expected to conform to professional standards of lucidity, coherence, grammar, spelling, and punctuation. All oral presentations produced by students in all classes under the jurisdiction of the college are expected to conform to professional standards of lucidity, coherence, and grammar. 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.

SPECIAL ACADEMIC PROGRAM

EDUCATION PROGRAM

Marquette University offers majors in elementary/middle school or middle school/secondary education. Students pursuing elementary/middle school education can pursue a second major in communication studies, journalism or theatre arts. Communication students pursuing a middle school/ secondary education major must complete a teaching major in journalism, communication studies or theatre arts. **Separate and special application to the School of Education is required to pursue an education major.** The state of Wisconsin mandates a 2.500 grade point average for admission into the School of Education. A 2.750 grade point average in areas of licensure and in the professional education sequence is required for licensure. See the School of Education section of this bulletin for details. See the School of Education adviser whose office is Schroeder Complex, 150, (414) 288-6981 as soon as possible to avoid delays in meeting program requirements.

STUDENT MEDIA

BROADCAST OPERATIONS

MUTV is a student-run, cable television station which serves the campus community. Some programs are also distributed to homes in the metropolitan Milwaukee area by the Higher Education Cable Consortium. The station is a co-curricular activity in the 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 color studios and a computerized newsroom.

Marquette Radio, a student-run radio station, is broadcast on Time-Warner and carrier current into residence halls, the Alumni Memorial Union and other campus buildings. Marquette Radio is a co-curricular activity in the 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 on the fourth floor of Johnston Hall. The studios include a main broadcast studio, a news/production studio, and a computerized newsroom.

PRINT OPERATIONS

The two student publications are run by students with advice and assistance from the advertising adviser and 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 student newspaper of the university. 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* 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; and (3) afford students the opportunity for practice in magazine editing, writing, and production.

FACILITIES/LABORATORIES

COLLEGE READING ROOM

The College Reading Room is located in the basement of Johnston Hall. Available for student and faculty use are selected magazines, books and reference materials serving specialized or scholarly needs.

LABORATORIES

Several laboratories are available to students in the College of Communication. These facilities include:

ADVANCED DIGITAL LABORATORY

The J. William and Mary K. Diederich Advanced Digital Laboratory is an advanced 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.

BROADCAST LABORATORIES

In-studio work employs two fully-equipped color studios (one of which is broadcast quality), nine video editing suites, three 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. Television mobile equipment is used to broadcast sporting events.

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 System is used extensively for class-related and co-curricular activities including live news broadcasts by Marquette University Television and Marquette Radio.

GRAPHICS LABORATORY

Students use Apple Macintosh workstations equipped with professional production software for publication editing, design and desktop publishing courses.

NEW MEDIA CENTER

The Wakerly New Media Center for Innovation and Creativity provides a laboratory of up-to-date digital hardware, software and workspace appropriate for the development of multimedia projects. Individual students and teams typically work on personal, class, and community service projects. Web design, graphic layout, video, and advertising campaign development are typical areas of project focus.

Student digital design teams provide graphic, prepress, and Web services of the university community and non-profit organizations.

REPORTING LABORATORIES

Reporting laboratories are equipped with personal computers and standard newsroom reference materials, and Internet capabilities.

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.

CENTERS FOR COMMUNICATION RESEARCH

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 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 programs.

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 College of Communication Student Council membership integrates social and academic student activities across the college. Two students are selected from each academic area to represent their fellow students on the council. The council provides opportunities in a wide variety of leadership positions.

MULTI-CULTURAL ASSOCIATION OF COMMUNICATION STUDENTS

MACS seeks to enhance student awareness of resources and opportunities available to them. The organization serves to connect its multicultural membership to professionals and national organizations in the various fields of communication.

DEBATE TEAM

The debate team competes in tournaments on college and university campuses across the country. The team 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. The debate team is designed as an outlet for students who are interested in developing research and argumentation skills in a competitive environment.

LAMBDA PI ETA

Lambda Pi Eta is an honorary society, sponsored by the National Communication Association, for outstanding full-time undergraduate students in communication studies. For eligibility, student are required to achieve a 3.250 Q.P.A. in the communication studies major, a 3.000 overall Q.P.A. and have completed nine hours in the major. Benefits include the possibility of participating in a yearly national undergraduate conference and/or in the yearly 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. Appointments are made annually.

MARQUETTE UNIVERSITY PLAYERS

The Marquette University Players invites participation by students from across the campus. Student members participate in the Department of Performing Arts' five major and numerous studio productions each academic year.

PUBLIC RELATIONS STUDENT SOCIETY OF AMERICA

The Marquette University Public Relations Student Society of America club chapter provides students with a better understanding of public relations in a corporate as well as non-profit setting. The club receives the professional guidance offered by the Wisconsin Chapter of 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 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.

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.

CURRICULA INFORMATION

MAJOR AND MINOR REQUIREMENTS

MAJORS

The College of Communication offers majors in advertising, broadcast and electronic communication, communication studies, journalism, public relations, and theatre arts. Teaching majors are available in communication studies, journalism and theatre arts. Students majoring in advertising, broadcast and electronic communication, journalism, and public relations cannot take more than 48 credits in these areas. 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 the college office where they will be referred to 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 college office.

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 of the Department of Broadcast 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. Advisers are assigned to students based on the major. Students can declare their major in the college Records Office.

MINORS

Students in the College of Communication are not required to complete a minor; however, students are encouraged to consider the benefits of a minor or second major. Minors are offered by most disciplines in the College of Arts and Sciences and the requirements are listed in the Course Description sections 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. Minors offered by the College of Communication are listed after the majors in this section of the bulletin, in front of the Course Description section.

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 and approved by the adviser and associate dean.

ADVERTISING MAJOR REQUIREMENTS

General Information: 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 are emphasized, taking advantage of the thriving local advertising community.

Requirements for a Major: A total of 32 credits of course work must be completed for the major in advertising. Majors in advertising cannot take more than 48 credits in the mass communication areas (ADPR, BREC, COMM and JOUR). The following courses must be completed toward the 32 credits:

| <i>Course</i> | <i>Credit</i> |
|--|---------------|
| ADPR 008 Media Writing | 3 |
| ADPR 140 Advertising Principles | 3 |
| ADPR 142 Strategic Research for Advertising and Public Relations | 3 |
| ADPR 144 Advertising Copywriting | 3 |
| ADPR 145 Advertising Media | 3 |
| ADPR 146 Advertising Campaigns | 3 |
| ADPR 180 Public Relations Principles | 3 |
| COMM 161 Ethical Problems of Mass Communication | 3 |
| COMM 165 Media Law | 3 |
| ADPR/BREC/JOUR Electives | 5 |
| | <hr/> 32 |

The following courses are also required but do not count as hours in the major: CMST 052, ECON 043, MARK 140, PSYC 001, and either MATH 060, PSYC 060 or MANA 025.

MINORS

Students in the College of Communication are not required to complete a minor, however, students are encouraged to consider the benefits of a minor or second major.

The following minors are available to any Marquette University student. Students majoring in advertising, broadcast and electronic communication, journalism or public relations cannot take more than 48 credits in the mass communication area.

Advertising Minor: 18 credits including ADPR 008, ADPR 140, and four courses chosen from the following: ADPR 142, 143, 144, 145, 146, 147, 148, 149, 150 and ?185.

Broadcast and Electronic Communication Minor: 20 credits including BREC 001, 005, COMM 020 and 166. The remainder consists of courses selected in consultation with a BREC adviser.

Communication Studies Minor: 20 credits including CMST 010, 012, 053, 054 and 131 or 154, plus electives.

Film Minor: 18 credits selected from any FILM courses, and any other related courses offered (i.e., ENGL 194, FREN 129 or MUSI 152) in other departments

Public Relations Minor: 18 credits including JOUR or ADPR 008, ADPR 180 and 4 of the following: ADPR 142, 143, 148, 149, 150, 181, 183 and ?185.

Theatre Arts Minor: 18 credits including THAR 010, 016, 023, 052 and 150 plus electives.

**Teaching Minor in Communication Studies:* 26 credits including COMM 020, CMST 010, 012, 053, 054, 124, 131 or 154, 156 plus electives.

**Teaching Minor in Journalism:* 22 credits including JOUR 001, 008, 010, 100, 163, COMM 020, 161 and 165. Students must also complete JOUR 185 as part of the required education sequence, not as credit towards the journalism minor.

**Teaching Minor in Theatre Arts:* 26 credits including THAR 010, 016, 023, 052, 150 and 160 plus electives.

**Appropriate only for students completing an academic area teaching major.*

Minors are also offered by most disciplines in other colleges or students can 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 and approved by the adviser and associate dean.

COMPUTER WORKSHOP

Computer workshops are offered each term for students who need competency in a particular program for the course. Students will be excused from the workshop if they can demonstrate proficiency with: Microsoft Word and Excel; Adobe Photoshop and InDesign; and Web browsers.

The typical program for advertising majors appears at the end of this section.

BROADCAST AND ELECTRONIC COMMUNICATION MAJOR REQUIREMENTS

General Information: 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

news and entertainment programs for the electronic media. Programs of study appropriate for careers in broadcast journalism, production, writing, programming, management, audience research, sales, promotion, or alternative media can be selected.

Requirements for a Major: A total of 36 credits of course work must be completed for the major in broadcast and electronic communication. Majors in broadcast and electronic communication cannot take more than 48 credits in the mass communication areas (ADPR, BREC, COMM, JOUR).

| | <i>Required Courses</i> | <i>Credits</i> |
|-----------------|--|----------------|
| BREC 001 | Practicum in Student Broadcasting | 1 |
| BREC 005 | Production Techniques | 3 |
| BREC 035 or 045 | Script and Continuity or Broadcast Newswriting and Editing | 3 |
| COMM 020 | Media in Society | 3 |
| COMM 161 | Ethical Problems of Mass Communication | 3 |
| COMM 165 | Media Law | 3 |
| COMM 166 | Mass Communication Theory and Research | 3 |
| BREC | BREC electives | *17 |
| <i>Total</i> | | <hr/> 36 |

* 5-7 of these credits can be from ADPR/JOUR/COMM with departmental consent

BREC majors must complete at least 65 credit hours in liberal arts courses including CMST 012, PSYC 001 and one of the following: MATH 060, PSYC 060, SOCI 060 or COMM 123. BREC majors are allowed a maximum of three credits in BREC 193 and three credits in BREC 168. They are allowed no more than six credits in or a combination of BREC 194 and BREC 196.

Students should consult their advisers for information regarding courses appropriate to various career goals. For example, students interested in broadcast journalism are advised to select courses such as BREC 045, 050, 145, 146, and 147. These choices emphasize writing and reporting while providing sufficient background in critical areas. In contrast, students wishing to emphasize production might select BREC 035, 050, 121, 130, 150, 155, 164, 170 and/or 171. Other combinations and/or emphases are possible.

Although BREC students are not required to complete a departmental minor, students are advised to consider minors in one of the following areas: business, marketing, political science, history, psychology, sociology, communication studies or theatre arts.

BROADCAST JOURNALISM

Students should pursue their major in the Department of Broadcast and Electronic Communication. Related coursework should emphasize broadcast newswriting and reporting, history, law and ethics, and it should begin no later than the sophomore year. Broadcast journalism students are encouraged to be actively involved with Marquette's student radio and television newscasts and complete one or more broadcast news internships before graduating.

ELECTRONIC COMMUNICATION STUDIES

Students with specialized interests in corporations and institutions which need graduates with skills in multimedia and electronic communication may pursue one of the programs suggested below. Students with such interests should consult with the chair of broadcast and electronic communication who will refer them to an appropriate faculty adviser.

Business Studies: Introduction to the development, use and evaluation of electronic communication in business settings. Requires 52 hours of course work, 31 hours from communication and 21 hours from business.

Economics and Policy Studies: Introduction of electronic communication theories, techniques and practices as well as the political processes and economic systems that shape the practice of mediated communication in public and private organizations. Requires 58 hours of course work, 31 hours from communication and 27 hours from economics and policy.

Education Studies: Theories and practices of developing, using and evaluating electronic communication in educational and business settings. Does not count toward teacher certification. Requires 52 hours of course work, 31 hours from communication and 21 hours from education.

Health Studies: Introduction to the development, use and evaluation of electronic communication in health care settings. Requires 58 hours of course work, 31 hours from communication and 27 hours from health sciences.

The typical program for broadcast and electronic communications majors appears at the end of this section.

COMMUNICATION STUDIES MAJOR REQUIREMENTS

General Information: The major in communication studies examines the theories, principles, and practices of human communication. It is understood that communication is important to personal, social, academic, and professional development.

The program's objectives include: (1) to understand the central position communication occupies in human life and relationships; (2) to develop logical thinking in its relation to situations, audiences, and arguments; (3) to experience and examine the relationship between human interaction and decision making; (4) to explore the principles and theories of effective expression; (5) to develop the following listening skills: appreciative, empathic, comprehensive, and analytical; and (6) to analyze the role of communication in conflict negotiation and resolution.

Requirements for the Major: A total of 32 credits of course work must be completed for the major in communication and rhetorical studies.

| Course | Credit |
|---|--------|
| CMST 010 Intro to Communication | 3 |
| CMST 012 Public Speaking | 2 |
| CMST 053 Argumentation | 3 |
| CMST 054 Intro to Communication Theory & Research | 3 |
| CMST 131 Interpersonal Communication | 3 |
| CMST 154 Persuasion | 3 |
| CMST CMST electives | 15 |

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The typical program for communication studies majors appears at the end of this section.

TEACHING MAJOR IN COMMUNICATION STUDIES REQUIREMENTS

General Information: The major is designed to educate teachers for the middle and secondary schools. It provides a broad background of academic experience in speech communication including public speaking, interpretation, interpersonal communication, discussion, and debate. Although a broad background is required, a student is permitted to select credits in his/her area of interest.

Requirements for the Major: A total of 34 credits of course work must be completed for the teaching major in communication and rhetorical studies.

| Course | Credit |
|---|--------|
| COMM 020 Media in Society | 3 |
| CMST 010 Intro to Communication | 3 |
| CMST 012 Public Speaking | 2 |
| CMST 014 Oral Interpretation of Literature | 3 |
| CMST 053 Argumentation | 3 |
| CMST 054 Intro to Communication Theory and Research | 3 |
| CMST 124 Directing Speech Activities | 3 |
| CMST 131 Interpersonal Communication | 3 |
| CMST 154 Persuasion | 3 |
| CMST 156 Classical Rhetorical Theory | 3 |
| CMST CMST electives | 5 |

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(See the School of Education section of this bulletin for complete details. A quality point average of 2.500 overall, 2.750 major, and 2.750 in education courses is required before student teaching can be scheduled and is required by the Wisconsin Department of Public Instruction.)

The typical program for communication studies teaching majors (middle/secondary) appears at the end of this section.

JOURNALISM MAJOR REQUIREMENTS

General Information: 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. Graduates, grounded in the liberal arts, learn about those areas of law, history, ethics and social science which relate to the media and its functions in society and acquire the professional expertise necessary to pursue careers in journalism itself as well as other related fields such as law, business and government. Writing is emphasized.

Requirements for a Major: A total of 40 credits of course work must be completed for the major in Journalism. Majors in Journalism cannot take more than 48 credits in the mass communication areas (ADPR, BREC, COMM and JOUR). The following courses must be completed toward the 32 credits:

| Course | Credit |
|---|--|
| JOUR 001 | Practicum in Student Publications 1 |
| JOUR 008 | News Media Writing 3 |
| JOUR 010 | Reporting 3 |
| JOUR 100 | Publications Editing 3 |
| JOUR 163 | History of American News Media 3 |
| COMM 020 | Media in Society 3 |
| COMM 161 | Ethical Problems of Mass Communication 3 |
| COMM 165 | Media Law 3 |
| One theory/research course: 3 | |
| COMM 160 | Mass Media and the American Family |
| COMM 162 | International Communication |
| COMM 166 | Mass Communication Theory and Research |
| COMM 167 | Race and Gender Issues in Mass Media |
| One writing course: 3 | |
| JOUR 111 | Article Writing |
| JOUR 175 | Public Affairs Reporting |
| One design/editing course: 3 | |
| JOUR 150 | Newspaper Design |
| JOUR 151 | Magazine Design |
| JOUR 152 | Web Design |
| Journalism Electives* 9 | |
| | <hr/> 40 |

*Maximum of three credits in JOUR 193; with consent of adviser, student may choose appropriate ADPR/BREC/COMM courses.

The following courses also are required but do not count as hours in the major: ECON 020, POSC 020, plus one of the following: MATH 060 or PSYC 060 or SOCI 060 or COMM 123. One course in U.S. history. Two courses chosen from: PSYC 001, SOCI 001 or ANTH 001, plus one upper division course in the same subject. Majors must also take a natural science course from ARSC 010, 011, PHYS 009 or a laboratory science course.

COMPUTER WORKSHOPS

Computer workshops are offered each term for students who need competency in a particular program for the course. Students will be excused from the workshop if they can demonstrate proficiency with: Microsoft Word and Excel; Adobe Photoshop and InDesign; and Web browsers.

TEACHING MAJOR IN JOURNALISM

The teaching major in journalism consists of 34 hours consisting of JOUR 001, 008, 010, 100, 150, 163, 175 and 177. Also required are COMM 020, 161 and 165 and one course from among COMM 160, 162, 166 or 167. In addition students must complete JOUR 185. Credit from JOUR 185 is applied as part of the required education sequence, not as credit towards the journalism major.

Please Note: Students completing a teaching major must also complete a middle school/secondary education major to receive teacher certification. See the School of Education section of this bulletin for complete details. A quality point average of 2.500 overall, 2.750 in the major, and 2.750 in education courses is required before student teaching can be scheduled and is required by the Wisconsin Department of Public Instruction.

The typical program for journalism majors and journalism teaching majors (middle/secondary) appears at the end of this section.

PUBLIC RELATIONS MAJOR REQUIREMENTS

PUBLIC RELATIONS REQUIREMENTS

General Information: 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 non-profit organizations. Internships are emphasized, taking advantage of the numerous public relations needs of local organizations.

Requirements for a Major: A total of 32 credits of course work must be completed for the major in public relations. Majors in public relations cannot take more than 48 credits in the mass communication areas (ADPR, BREC, COMM and JOUR). The following courses must be completed toward the 32 credits

| Course | Credit |
|---|--------|
| JOUR 008 Information Gathering and Media Writing | |
| or ADPR 008 Media Writing | 3 |
| ADPR 140 Advertising Principles | 3 |
| ADPR 142 Strategic Research for Advertising and Public Relations | 3 |
| ADPR 143 Marketing Communications Design and Production | 3 |
| COMM 161 Ethical Problems of Mass Communication | 3 |
| COMM 165 Media Law | 3 |
| ADPR 180 Public Relations Principles | 3 |
| ADPR 181 Writing for the Marketplace: Public Relations and Business | 3 |
| ADPR 183 Public Relations Campaigns | 3 |
| ADPR 193 Internship in ADPR | 3 |
| ADPR/BREC/JOUR electives | 2 |

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The following courses are also required but do not count as hours in the major: ECON 043, MARK 140, PSYC 001 and either MATH 060, PSYC 060, or MANA 025. Public relations majors must also choose one course from the following: CMST 052, CMST 132 or CMST 154.

The typical program for public relations majors appears at the end of this section.

THEATRE ARTS MAJOR REQUIREMENTS

General Information: The Marquette theatre arts major 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 College of Communication such as advertising, broadcasting, public relations, or communication studies. Or they may select a minor from the College of Business Administration (i.e. marketing) or the 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.

In addition to the major and minor in theatre arts, the Department of Performing Arts offers interdisciplinary minors in dance and musical theatre. These interdisciplinary minors are declared in the sophomore or junior years. Your adviser will assist you in selecting classes for these interdisciplinary minors.

Required for a Major: A total of 35 credits of course work must be completed for the major in theatre arts:

| <i>Course</i> | <i>Credit</i> |
|--|---------------|
| THAR 010 Acting I – Fundamental Technique | 3 |
| THAR 016 Stagecraft | 3 |
| THAR 023 Basic Costume Technology | 3 |
| THAR 052 Play Analysis | 3 |
| THAR 150 History of Theatre | 3 |
| THAR 192 Career and Preparation Studies Seminar | 1 |
| One course from Sequence I — Performance | 2-3 |
| THAR 011, 026, 028, 030, 031, 126, 128, 130, 134, 136 | |
| One course from Sequence II — Design, technical/management | 2-3 |
| THAR 012, 118, 119, 120, 121, 122, 124, 127 and 160 | |
| One course from Sequence III — History | 3 |
| Thar 123, 125, 129, 140, 153 | |
| Theatre Arts electives (to reach 35 credits). | 10-12 |

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In addition to the required sequence, those students who wish to concentrate in a specific discipline within the performing arts, the following courses are strongly recommended for specific tracks.

Performance: THAR 010*, THAR 011, THAR 012, THAR 016*, THAR 023*, THAR 026, THAR 028, THAR 030, THAR 031, THAR 052*, THAR 126, THAR 132, THAR 150*, THAR 192, DANC 039, DANC 042, DANC 043, DANC 050. THAR 026 and THAR 028 are required for performance track.

Directing: THAR 010*, THAR 011, THAR 016*, THAR 023*, THAR 118, THAR 026, or THAR 119, THAR 052*, THAR 126, THAR 128, THAR 150*, THAR 160, THAR 192. Depending on your interest, other recommended courses include Dance Composition, additional acting courses, advanced play analysis, an internship, and independent project, or a senior thesis.

Design/Technical: THAR 010*, THAR 016*, THAR 023*, THAR 052*, THAR 118, THAR 119, THAR 126, THAR 120, THAR 122, THAR 127, THAR 150*, THAR 160, THAR 192. Depending on your interest, other recommended courses include Dance, Art, History, and CAD class.

*required courses

The following courses will be assigned a sequence at the time of registration: THAR 168, 193, 195, 196, and 199.

Participation in Theatre Productions: All theatre 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 technical, design, or management capacity. All students must have a minimum 2.000 Q.P.A. to participate in all productions.

TEACHING MAJOR IN THEATRE ARTS

The teaching major in theatre arts requirements are identical to those listed under the theatre arts major, plus THAR 160.

Please Note: Students completing a teaching major must also complete a secondary education major to receive teacher certification. See the School of Education section of this bulletin for complete details. A quality point average of 2.500 overall, 2.750 in the major, and 2.750 in education courses is required before student teaching can be scheduled and is required by the Wisconsin Department of Public Instruction.

The typical program for theatre arts major and theatre arts teaching majors (elementary/middle and middle/secondary) appears at the end of this section.

TYPICAL PROGRAM FOR ADVERTISING MAJORS*Freshman*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|-----------------------------------|-----------|
| CMST 010. | 3 | COMM 020. | 3 |
| UCCS (R-ENGL 001) | 3 | Social Science elective | 3 |
| UCCS (HCS). | 3 | History elective | 3 |
| Foreign language | 4 | Foreign language | 4 |
| PHIL 001 | 3 | UCCS (HNE). | 3 |
| <hr/> | | <hr/> | |
| 15-16 | | 15-16 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|---|-----------|
| COMM 011 or ECON 043. | 3 | COMM 011 or ECON 043 | 3 |
| UCCS (DC) or THAR 050/COMM 021 | 3 | UCCS (DC) or THAR 050/COMM 021. | 3 |
| UCCS (MR-MATH 060) or (SN). | 3-4 | UCCS (MR-MATH 060) or (SN) | 3-4 |
| Literature | 3 | Literature | 3 |
| ADPR 008. | 3 | ADPR 142 | 3 |
| ADPR 140. | 3 | | |
| <hr/> | | <hr/> | |
| 18-19 | | 15-16 | |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------------------|-----------|--------------------------------------|-----------|
| UCCS (ISB-PSYC 001) or (T) | 3 | UCCS (ISB-PSYC 001) or (T) | 3 |
| CMST 052. | 3 | COMM 161 | 3 |
| MARK 140 | 3 | ADPR 180 | 3 |
| UCCS (HNE) | 3 | ADPR 193 or ADPR elective | 3 |
| ADPR 144. | 3 | Major/minor elective | 3 |
| <hr/> | | <hr/> | |
| 15 | | 15 | |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-----------|---------------------------|-----------|
| UCCS (T) | 3 | UCCS (LPA)* | 0-3 |
| ADPR 145. | 3 | ADPR 146 | 3 |
| COMM 165. | 3 | Minor/electives | 9-12 |
| Minor/electives | 3-9 | | |
| <hr/> | | <hr/> | |
| 12-18 | | 15-18 | |

University Core of Common Studies (UCCS)

Diverse Cultures (DC)

Histories of Cultures and Societies (HCS)

Human Nature and Ethics (HNE)

Individual and Social Behavior (ISB)

Literature/Performing Arts (LPA)*

Mathematical Reasoning (MR)

Rhetoric (R)

Science and Nature (SN)

Theology (T)

See the listing of approved UCCS courses

* THAR 050 Theatre Appreciation can be used to fulfill the UCCS Literature/Performing Arts Requirement and the College of Communication Curriculum Requirement.

TYPICAL PROGRAM FOR BROADCAST AND ELECTRONIC COMMUNICATION MAJORS*Freshman*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|------------------------------|-----------|
| CMST 010. | 3 | COMM 020. | 3 |
| UCCS (R-ENGL 001) | 3 | Social science elective | 3 |
| UCCS (HCS). | 3 | History elective | 3 |
| Foreign language | 4 | Foreign language | 4 |
| PHIL 001 | 3 | BREC 005 or 035/045 | 3 |
| BREC 001 | 1 | | |
| | <hr/> 17 | | <hr/> 16 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------------|-------------|--------------------------------------|-------------|
| COMM 011 or CMST 012 | 2-3 | COMM 011 or CMST 012 | 2-3 |
| UCCS (DC) or THAR 050/COMM 021 | 3 | UCCS (DC) or THAR 050/COMM 021. | 3 |
| UCCS (MR) or (SN) | 3-4 | UCCS (MR) or (SN). | 3-4 |
| Literature | 3 | Literature | 3 |
| BREC 005 or 035/045. | 3 | Major/minor elective | 3 |
| | <hr/> 14-16 | | <hr/> 14-16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-------------|---------------------------------|-------------|
| UCCS (HNE) | 3 | UCCS (HNE) | 3 |
| UCCS (ISB-PSYC 001) or (T) | 3 | UCCS (ISB-PSYC 001) or (T) | 3 |
| COMM 166. | 3 | BREC electives. | 6 |
| BREC electives | 6 | Minor/electives | 3-6 |
| Minor/electives | 0-3 | | |
| | <hr/> 15-18 | | <hr/> 15-18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------------|-------------|-----------------------------|-------------|
| UCCS (T) | 3 | Major elective courses | 3-6 |
| COMM 161 or 165. | 3 | COMM 161 or 165 | 3 |
| Major elective courses. | 3-6 | UCCS (LPA)* | 0-3 |
| Minor/electives | 3-6 | Minor/electives | 6 |
| | <hr/> 12-18 | | <hr/> 12-18 |

University Core of Common Studies (UCCS)
 Diverse Cultures (DC)
 Histories of Cultures and Societies (HCS)
 Human Nature and Ethics (HNE)
 Individual and Social Behavior (ISB)
 Literature/Performing Arts (LPA)*
 Mathematical Reasoning (MR)
 Rhetoric (R)
 Science and Nature (SN)
 Theology (T)
 See the listing of approved UCCS courses

* THAR 050 Theatre Appreciation can be used to fulfill the UCCS Literature/Performing Arts Requirement and the College of Communication Curriculum Requirement.

TYPICAL PROGRAM FOR COMMUNICATION STUDIES MAJORS*Freshman*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------------------|-----------|----------------------------------|-----------|
| CMST 010. | 3 | COMM 020. | 3 |
| UCCS (R-ENGL 001) | 3 | History elective. | 3 |
| UCCS (HCS). | 3 | Foreign language. | 4 |
| Foreign language. | 4 | PHIL 001 or social science. | 3 |
| PHIL 001 or social science. | 3 | CMST 012. | 2 |
| | <hr/> 16 | | <hr/> 15 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------------------|-------------|--------------------------------------|-------------|
| COMM 011 or major elective. | 3 | COMM 011 or major elective. | 3 |
| UCCS (DC or THAR 050/COMM 021). | 3 | UCCS (DC or THAR 050/COMM 021). | 3 |
| UCCS (MR) or (SN). | 3-4 | UCCS (MR) or (SN). | 3-4 |
| Literature. | 3 | Literature. | 3 |
| CMST 053. | 3 | Major elective course. | 3 |
| CMST 054. | 3 | Minor/elective. | 3 |
| | <hr/> 18-19 | | <hr/> 18-19 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-------------|-------------------------|-------------|
| UCCS (HNE). | 3 | UCCS (HNE). | 3 |
| UCCS (ISB) or (T). | 3 | UCCS (ISB) or (T). | 3 |
| CMST 131. | 3 | CMST 154. | 3 |
| Minor/electives. | 6-9 | Minor/electives. | 6-9 |
| | <hr/> 15-18 | | <hr/> 15-18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-------------|---------------------------|-------------|
| UCCS (T). | 3 | Major/Minor courses. | 12-15 |
| Major/Minor courses. | 9-15 | UCCS (LPA)*. | 0-3 |
| | <hr/> 12-18 | | <hr/> 12-18 |

University Core of Common Studies (UCCS)

Diverse Cultures (DC)

Histories of Cultures and Societies (HCS)

Human Nature and Ethics (HNE)

Individual and Social Behavior (ISB)

Literature/Performing Arts (LPA)*

Mathematical Reasoning (MR)

Rhetoric (R)

Science and Nature (SN)

Theology (T)

See the listing of approved UCCS courses

* THAR 050 Theatre Appreciation can be used to fulfill the UCCS Literature/Performing Arts Requirement and the College of Communication Curriculum Requirement.

TYPICAL PROGRAM FOR JOURNALISM MAJORS*Freshman*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|--------------------------------|-----------|
| CMST 010. | 3 | COMM 020. | 3 |
| UCCS (R-ENGL 001) | 3 | PSYC 001 or SOCI 001 | 3 |
| UCCS (HCS). | 3 | American history elective | 3 |
| Foreign language | 4 | Foreign language | 4 |
| PHIL 001 | 3 | JOUR 008. | 3 |
| JOUR 001 | 1 | | |
| | <hr/> 17 | | <hr/> 16 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-------------|---|-------------|
| COMM 011 or JOUR 010. | 3 | COMM 011 or JOUR 010 | 3 |
| UCCS (DC-ANTH 001 or THAR 050/COMM 021) | 3 | UCCS (DC-ANTH 001 or THAR 050/COMM 021) | 3 |
| UCCS (MR-MATH 060) or (SN). | 3-4 | UCCS (MR-MATH 060) or (SN) | 3-4 |
| Literature | 3 | Literature | 3 |
| UCCS (ISB-Econ 020 or Posc 020) | 3 | ECON 020 or POSC 020. | 3 |
| | <hr/> 15-16 | | <hr/> 15-16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-------------|--|-------------|
| UCCS (HNE) | 3 | UCCS (HNE) | 3 |
| JOUR 163 | 3 | UCCS (T). | 3 |
| JOUR 100 or journalism writing elective. | 3 | Upper division ANTH or PSYC or SOCI. | 3 |
| JOUR elective or theory/research. | 3 | JOUR 100 or journalism writing elective | 3 |
| Minor/elective | 3-6 | JOUR design or theory/research | 3 |
| | <hr/> 15-18 | Minor/elective. | 0-3 |
| | | | <hr/> 15-18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------------|-------------|-----------------------|-------------|
| UCCS (T) | 3 | UCCS(LPA)* | 0-3 |
| COMM 161 or 165. | 3 | COMM 161 or 165 | 3 |
| JOUR design or elective | 3 | JOUR electives. | 3 |
| JOUR elective | 3 | Minor/electives. | 6-9 |
| Minor/electives | 3-6 | | |
| | <hr/> 15-18 | | <hr/> 15-18 |

University Core of Common Studies (UCCS)

Diverse Cultures (DC)

Histories of Cultures and Societies (HCS)

Human Nature and Ethics (HNE)

Individual and Social Behavior (ISB)

Literature/Performing Arts (LPA)*

Mathematical Reasoning (MR)

Rhetoric (R)

Science and Nature (SN)

Theology (T)

See the listing of approved UCCS courses

* THAR 050 Theatre Appreciation can be used to fulfill the UCCS Literature/Performing Arts Requirement and the College of Communication Curriculum Requirement.

TYPICAL PROGRAM FOR PUBLIC RELATIONS MAJORS*Freshman*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|-----------------------------------|-----------|
| CMST 010. | 3 | COMM 020. | 3 |
| UCCS (R-ENGL 001) | 3 | Social science elective | 3 |
| UCCS (HCS). | 3 | History elective | 3 |
| Foreign language | 4 | Foreign language | 4 |
| PHIL 001 | 3 | UCCS (HNE). | 3 |
| <hr/> | | <hr/> | |
| 15-16 | | 15-16 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|---|-----------|
| COMM 011 or ECON 043. | 3 | COMM 011 or ECON 043 | 3 |
| UCCS (DC) or THAR 050/COMM 021 | 3 | UCCS (DC) or THAR 050/COMM 021. | 3 |
| UCCS (MR-MATH 060) or (SN). | 3-4 | UCCS (MR-MATH 060) or (SN) | 3-4 |
| Literature | 3 | Literature | 3 |
| ADPR/JOUR 008. | 3 | ADPR 140 | 3 |
| ADPR 180. | 3 | | |
| <hr/> | | <hr/> | |
| 18-19 | | 15-16 | |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------------------|-----------|--------------------------------------|-----------|
| UCCS (ISB-PSYC 001) or (T) | 3 | UCCS (ISB-PSYC 001) or (T) | 3 |
| Major/minor elective | 3 | CMST 052, 132 or 154 | 3 |
| MARK 140 | 3 | UCCS (HNE). | 3 |
| ADPR 142 or 143. | 3 | ADPR 142 or 143 | 3 |
| ADPR 181. | 3 | ADPR 193 | 3 |
| <hr/> | | <hr/> | |
| 15 | | 15 | |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-----------|---------------------------|-----------|
| UCCS (T) | 3 | UCCS (LPA)* | 0-3 |
| ADPR 183. | 3 | ADPR elective | 3 |
| COMM 161. | 3 | COMM 165 | 3 |
| Minor/electives | 3-9 | Minor/electives | 6-9 |
| <hr/> | | <hr/> | |
| 12-18 | | 12-18 | |

University Core of Common Studies (UCCS)

Diverse Cultures (DC)

Histories of Cultures and Societies (HCS)

Human Nature and Ethics (HNE)

Individual and Social Behavior (ISB)

Literature/Performing Arts (LPA)*

Mathematical Reasoning (MR)

Rhetoric (R)

Science and Nature (SN)

Theology (T)

See the listing of approved UCCS courses

* THAR 050 Theatre Appreciation can be used to fulfill the UCCS Literature/Performing Arts Requirement and the College of Communication Curriculum Requirement

TYPICAL PROGRAM FOR THEATRE ARTS MAJORS*Freshman*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|--------------------------------|-----------|
| CMST 010. | 3 | COMM 020. | 3 |
| UCCS (R-ENGL 001) | 3 | Social science elective | 3 |
| Foreign language | 4 | Foreign language | 4 |
| THAR 010. | 3 | THAR 011 or THAR elective | 3 |
| THAR 016 or 023. | 3 | THAR 016 or 023 | 3 |
| | <hr/> 16 | | <hr/> 16 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------------|-------------|--------------------------------------|-------------|
| COMM 011 or major elective | 3 | COMM 011 or major elective | 3 |
| UCCS (DC) or THAR 050/COMM 021 | 3 | UCCS (DC) or THAR 050/COMM 021. | 3 |
| UCCS (MR) or (SN) | 3-4 | UCCS (MR) or (SN). | 3-4 |
| UCCS (HCS). | 3 | History elective | 3 |
| THAR 052. | 3 | PHIL 001 | 3 |
| | <hr/> 15-16 | | <hr/> 15-16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------------|-------------|----------------------------|-------------|
| UCCS (HNE) | 3 | UCCS (HNE) | 3 |
| UCCS (ISB) or (T) | 3 | UCCS (ISB) or (T). | 3 |
| Literature | 3 | Literature | 3 |
| THAR 192. | 1 | THAR 150 | 3 |
| Major/Minor/electives | 5-8 | Major/Minor/electives | 3-6 |
| | <hr/> 15-18 | | <hr/> 15-18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-------------|----------------------------|-------------|
| UCCS (T) | 3 | Major/Minor electives | 6-9 |
| Major/Minor courses. | 9-12 | Major/Minor electives | 6 |
| | <hr/> 12-18 | UCCS (LPA)* | 0-3 |
| | | | <hr/> 12-18 |

University Core of Common Studies (UCCS)
 Diverse Cultures (DC)
 Histories of Cultures and Societies (HCS)
 Human Nature and Ethics (HNE)
 Individual and Social Behavior (ISB)
 Literature/Performing Arts (LPA)*
 Mathematical Reasoning (MR)
 Rhetoric (R)
 Science and Nature (SN)
 Theology (T)
 See the listing of approved UCCS courses

* THAR 050 Theatre Appreciation can be used to fulfill the UCCS Literature/Performing Arts Requirement and the College of Communication Curriculum Requirement.

TYPICAL PROGRAM FOR THE TEACHING MAJOR IN COMMUNICATION STUDIES AND MIDDLE/SECONDARY TEACHER PREPARATION

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------|-----------|-------------------------|-----------|
| CMST 010. | 3 | COMM 020. | 3 |
| UCCS (R-ENGL 001)..... | 3 | UCCS (R-ENGL 002) | 3 |
| UCCS (HCS)..... | 3 | PHIL 001 | 3 |
| Foreign language | 4 | Foreign language..... | 4 |
| UCCS (DC-EDUC 008) | 3 | EDUC 048 | 3 |
| | | CMST 012 | 2 |
| | <hr/> 16 | | <hr/> 18 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-----------|---------------------------|-----------|
| COMM 011 | 3 | ARSC 011 | 4 |
| UCCS (LPA-THAR 050)..... | 3 | EDUC 079 | 3 |
| UCCS (SN-ARSC 010)..... | 4 | EDUC 088 | 3 |
| UCCS (MR-MATH 060)..... | 3 | UCCS (HNE-PHIL 050) | 3 |
| UCCS (ISB-EDUC 078) | 3 | CMST 053 | 3 |
| CMST 014..... | 3 | | |
| | <hr/> 19 | | <hr/> 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------|-----------|---------------------------|-----------|
| EDUC 128 | 3 | EDUC 125 | 3 |
| Literature elective..... | 3 | Literature elective | 3 |
| History elective..... | 3 | UCCS (HNE-PHIL 104) | 3 |
| UCCS (T-THEO 001)..... | 3 | UCCS (T)..... | 3 |
| CMST 054..... | 3 | CMST 154 | 3 |
| CMST 131..... | 3 | CMST124..... | 3 |
| | <hr/> 18 | | <hr/> 18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------|-------------|----------------|-----------|
| EDUC 158 | 3 | EDUC 176 | 12 |
| CMST 121..... | 3 | | |
| CMST 156..... | 3 | | |
| CMST electives | 4-9 | | |
| | <hr/> 13-18 | | |

University Core of Common Studies (UCCS)
 Diverse Cultures (DC)
 Histories of Cultures and Societies (HCS)
 Human Nature and Ethics (HNE)
 Individual and Social Behavior (ISB)
 Literature/Performing Arts (LPA)*
 Mathematical Reasoning (MR)
 Rhetoric (R)
 Science and Nature (SN)
 Theology (T)
 See the listing of approved UCCS courses

TYPICAL PROGRAM FOR THE TEACHING MAJOR IN JOURNALISM AND MIDDLE/SECONDARY TEACHER PREPARATION

This schedule is set up for four-year completion WITH SUMMER SCHOOL INCLUDED. The courses listed following the senior year are usually available during summer school at Marquette or away. Without summer school, a NINTH term will be needed for student teaching.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------------|-----------|-------------------------------------|-----------|
| CMST 010. | 3 | COMM 020. | 3 |
| UCCS (R-ENGL 001) | 3 | UCCS (R-ENGL 002) | 3 |
| UCCS (HCS). | 3 | American history elective | 3 |
| Foreign language | 4 | Foreign language | 4 |
| UCCS (DC-EDUC 008) | 3 | EDUC 048 | 3 |
| JOUR 001 | 1 | JOUR 008. | 3 |
| | <hr/> 17 | | <hr/> 19 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|--|-----------|
| COMM 011 | 3 | ARSC 011 | 4 |
| UCCS (LPA-THAR 050). | 3 | EDUC 079 | 3 |
| UCCS (SN-ARSC 010) | 4 | EDUC 088 | 3 |
| UCCS (MR-MATH 060) | 3 | UCCS (HNE-PHIL 050) | 3 |
| UCCS (ISB-EDUC 078) | 3 | JOUR 100 | 3 |
| JOUR 010 | 3 | JOUR writing or theory/research. | 3 |
| | <hr/> 19 | | <hr/> 19 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|-------------------------------|-----------|
| EDUC 128 | 3 | EDUC 125 | 3 |
| Literature elective. | 3 | Literature elective | 3 |
| PHIL 001 | 3 | UCCS (HNE-PHIL 104) | 3 |
| UCCS (T-THEO 001) | 3 | UCCS (T). | 3 |
| JOUR writing or theory/research | 3 | JOUR design | 3 |
| JOUR 163 | 3 | JOUR elective. | 3 |
| | <hr/> 18 | | <hr/> 18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-----------|--------------------|-----------|
| EDUC 158 | 3 | EDUC 176 | 12 |
| COMM 161. | 3 | | |
| COMM 165. | 3 | | |
| JOUR 185 | 3 | | |
| JOUR elective | 3 | | |
| | <hr/> 15 | | |

Required courses that are suggested for summer school: POSC 020, ECON 020, two courses from ANTH 001/PSYC 001/SOCI 001 and an upper division course in ANTH or PSYC or SOCI

University Core of Common Studies (UCCS)
 Diverse Cultures (DC)
 Histories of Cultures and Societies (HCS)
 Human Nature and Ethics (HNE)
 Individual and Social Behavior (ISB)
 Literature/Performing Arts (LPA)*
 Mathematical Reasoning (MR)
 Rhetoric (R)
 Science and Nature (SN)
 Theology (T)
 See the listing of approved UCCS courses

TYPICAL PROGRAM FOR THE TEACHING MAJOR IN THEATRE ARTS AND MIDDLE/SECONDARY TEACHER PREPARATION

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------|-----------|-------------------------|-----------|
| CMST 010. | 3 | COMM 020. | 3 |
| UCCS (R-ENGL 001) | 3 | UCCS (R-ENGL 002) | 3 |
| Foreign language | 4 | Foreign language | 4 |
| THAR 010. | 3 | THAR 011. | 3 |
| THAR 016 or 023. | 3 | THAR 016 or 023. | 3 |
| UCCS (DC-EDUC 008) | 3 | EDUC 048. | 3 |
| | <hr/> 19 | | <hr/> 19 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-----------|---------------------------|-----------|
| COMM 011. | 3 | ARSC 011. | 4 |
| UCCS (LPA-THAR 050) | 3 | EDUC 079. | 3 |
| UCCS (SN-ARSC 010) | 4 | EDUC 088. | 3 |
| UCCS (MR-MATH 060) | 3 | UCCS (HNE-PHIL 050) | 3 |
| UCCS (ISB-EDUC 078) | 3 | UCCS (HSC) | 3 |
| THAR 052. | 3 | | |
| | <hr/> 19 | | <hr/> 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-----------|---------------------------|-----------|
| EDUC 128. | 3 | EDUC 125. | 3 |
| Literature elective. | 3 | Literature elective | 3 |
| History elective. | 3 | UCCS (HNE-PHIL 104) | 3 |
| UCCS (T-THEO 001) | 3 | UCCS (T) | 3 |
| PHIL 001. | 3 | THAR 150. | 3 |
| THAR 192. | 1 | THAR elective | 3 |
| | <hr/> 16 | | <hr/> 18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------|-------------|----------------|-----------|
| EDUC 158. | 3 | EDUC 176. | 12 |
| THAR 160. | 3 | | |
| THAR 170. | 3 | | |
| THAR electives | 6-9 | | |
| | <hr/> 15-18 | | |

University Core of Common Studies (UCCS)
 Diverse Cultures (DC)
 Histories of Cultures and Societies (HCS)
 Human Nature and Ethics (HNE)
 Individual and Social Behavior (ISB)
 Literature/Performing Arts (LPA)*
 Mathematical Reasoning (MR)
 Rhetoric (R)
 Science and Nature (SN)
 Theology (T)
 See the listing of approved UCCS courses

**FOR ELEMENTARY/MIDDLE TEACHER PREPARATION,
 PLEASE SEE SCHOOL OF EDUCATION**

COURSE DESCRIPTIONS

ADVERTISING AND PUBLIC RELATIONS (ADPR)

Professor: Badaracco

Associate Professor: Baxter (Emeritus), Crowley (Emeritus), Ekachai, Pokrywczynski, Wolburg

Assistant Professor: von Dorn

Professional in Residence: Menck

Lecturer: Austin, Barnes, Carlson, Cary, Gaillard, McIntyre, Schrank, Volrath

ADPR 008. Media Writing 3 sem. hrs.
Factual and persuasive writing for the mass media. Introduction to and practice in news writing, public relations writing and advertising copywriting. Basic information gathering. In-class writing exercises require use of computers. Offered every term. *Prereq:* ENGL 001 or equivalent and ENGL 002 or equivalent.

ADPR 140. Advertising Principles 3 sem. 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. Offered every term.

ADPR 142. Strategic Research for Advertising and Public Relations 3 sem. hrs.
Introduction to fundamental standards and practices of advertising and public relations research, focusing on audiences, messages, media, public opinion and issues management. Students learn to use research and to evaluate the quality of information for strategic planning based on validity, consistency, and reliability. Provides an opportunity for critique and practice of professional communication research. Offered every term. *Prereq:* ADPR 140; or ADPR 180.

ADPR 143. Marketing Communications Design and Production 3 sem. 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 008 and ADPR 140; or ADPR 180 and JOUR 008; or ADPR 008 and ADPR 180; or ADPR 140 and JOUR 008; or Consent required; consent of unit coordinator. Computer workshop or demonstrated proficiency on the Macintosh computer with QuarkXPress.

ADPR 144. Advertising Copywriting 3 sem. 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 and laboratory. Offered every term. *Prereq:* ADPR 008 and ADPR 140; or cons. of instr.

ADPR 145. Advertising Media 3 sem. hrs.
Study of the evaluation and selection of advertising media to meet specific advertising objectives. Theory and practice of media planning, including: audience measurement; reach, frequency, and continuity strategy; inter- and intra-media comparisons; budgeting. Principles of media scheduling and buying, computer media models. Testing media effectiveness. Offered fall term. *Prereq:* ADPR 140 and MARK 140 and PSYC 060; or ADPR 140 and MARK 140 and MATH 060.

ADPR 146. Advertising Campaigns 3 sem. 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. Offered spring term. *Prereq:* ADPR 144 and ADPR 145 and CMST 052; or cons. of instr.

ADPR 147. Advanced Advertising Copywriting 3 sem. hrs.
A continuation of ADPR 144. 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. Offered occasionally. *Prereq:* ADPR 144; or cons. of instr.

ADPR 148. Advertising and Public Relations Account Management 3 sem. 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. Offered occasionally. *Prereq:* ADPR 140; or ADPR 180.

ADPR 149. Business to Business Marketing 3 sem. 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. Offered occasionally. *Prereq:* ADPR 140; or ADPR 180; or cons. of instr.

ADPR 150. Advertising, Public Relations and the Internet 3 sem. hrs.
To introduce students to contemporary issues facing advertising and public relations practitioners using the Internet to improve communi-

cation for their clients or organizations. To investigate in some depth the implications of the Internet as a communication tool in major areas of advertising and public relations, including audiences, messages, integration with other more traditional media, public opinion, relationship building with various publics, and e-commerce as well as legal and ethical uses of the Internet. This course will NOT provide instruction on how to create Web pages or any of the other technical aspects of Internet use. This course will focus on discussion of strategic approaches to using the Internet for advertising and public relations applications. *Prereq:* ADPR 140; or ADPR 180.

ADPR 180. Public Relations Principles 3 sem. 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. Offered every term.

ADPR 181. Writing for the Marketplace: Public Relations and Business 3 sem. 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. Offered every semester. *Prereq:* ADPR 008 and ADPR 180; or ADPR 180 and JOUR 008.

ADPR 183. Public Relations Campaigns 3 sem. 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. Offered every semester. *Prereq:* ADPR 142 and ADPR 181; or cons. of instr.

▲ ADPR 185. Cultural Identity Media and World Religions 3 sem. 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: Jr. stndg.*

ADPR 193. Internship in Advertising and Public Relations 0-3 sem. 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. Offered every term. *Prereq: ADPR 008 and ADPR 140 and consent required; or ADPR 140 and JOUR 008 and consent required; or ADPR 008 and ADPR 180 and consent required; or ADPR 180 and JOUR 008 and consent required; Consent of ADPR Internship Director. S/U grade assessment.*

ADPR 194. Special Institute/Workshop/Project 1-3 sem. hrs.

Offered occasionally. *Prereq: ADVE Major; or ADVE Minor; or PURE Major; or PURE Minor; S/U grade assessment.*

ADPR 195. Independent Study 1-3 sem. hrs. Offered every term. S/U grades. *Prereq: Consent required; consent of unit coordinator.*

ADPR 196. Seminar in Advertising and Public Relations 1-3 sem. hrs.

Specific subjects of seminars to be announced in the *Timetable of Classes*. Variable topics. Offered occasionally.

ADPR 199. Senior Thesis 1-3 sem. hrs.

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Offered every term. *Prereq: Consent required; consent of unit coordinator.*

BROADCAST AND ELECTRONIC COMMUNICATION (BREC)

Associate Professor: Grams, Havice, Ksobiech, Porter, Slattery
Assistant Professor: Ugland
Adjunct Assistant Professor: Garinger
Adjunct Instructor: Fleming (Broadcast Media Adviser)
Lecturer: Nault

BREC 001. Practicum in Student Broadcasting 1 sem. hr.

Under faculty direction, students work in two or more departments of student radio (WMUR) or television station (MUTV). Experiences might include work in news, programming, traffic, production, promotion, etc. Offered every term. S/U grade assessment. S/U grade assessment.

BREC 005. Production Techniques 3 sem. hrs.

Basic audio and video production techniques as utilized in radio, television, cable, education, and corporate communications. Lecture/lab format. Offered every term.

BREC 035. Script and Continuity 3 sem. hrs. Survey of writing styles for electronic communication. Theory and extensive practice. Emphasis on both form and content. Offered every term. *Prereq: ENGL 001 and ENGL 002.*

BREC 045. Broadcast Newswriting and Editing 3 sem. hrs.

Theory and practice in writing and editing news for the electronic media. Includes gathering and writing local news, editing and rewrite of wire copy, interviews, and on-the-air coverage of news events. Offered every term. *Prereq: ENGL 001 or equivalent and ENGL 002 or equivalent.*

BREC 050. Television Production 3 sem. hrs. Practical application of the theories of television production. Emphasis on studio and field productions, development of basic directing skills, single camera video techniques, video editing. Production of short programs. Offered every spring. *Prereq: BREC 005 and BREC 035; or BREC 005 and BREC 045.*

BREC 121. Sound Design 3 sem. 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. Offered occasionally. *Prereq: BREC 050; or cons. of instr.*

BREC 130. Program Development 3 sem. hrs.

Planning and development of programs for specialized audience and objectives. Preparation of program layouts for television, cable, and corporate systems. Offered every semester.

BREC 135. Advanced Scriptwriting 3 sem. 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. Offered spring semester in even-numbered years. *Prereq: cons. of instr.*

BREC 140. Television Performance 3 sem. 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. Offered every spring term.

BREC 145. Radio Reporting/Performance 3 sem. hrs.

Extensive practice in gathering, writing, and reporting radio news. Emphasis on performance techniques appropriate to news, interviews, and special features. Offered every fall term. *Prereq: BREC 005 and BREC 045.*

BREC 146. Television Reporting 3 sem. hrs. Extensive practice in gathering, writing, and presenting television news. Emphasis on field production, performance, and editing of news actualities. Topics include narration, interviews, and problem stories. Offered every spring term. *Prereq: BREC 005 and BREC 045.*

BREC 147. News and Information Gathering 3 sem. hrs.

Analysis of the community with a view to the problems and opportunities for the broadcast media on the political, public, administrative, financial and commercial, labor, social welfare, and educational affairs of the community. Offered occasionally.

BREC 150. Advanced Television Production and Direction 3 sem. 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. Offered every fall term. *Prereq: BREC 050; or BREC 051.*

BREC 155. Corporate Media 3 sem. 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. Offered every fall term.

BREC 156. Technology and Learning 3 sem. hrs.

Learning theories applied to design, use and evaluation of electronic communication technologies in instructional settings. Offered every fall. *Prereq: Jr. stndg. and BREC 005 and BREC 035; or Jr. stndg. and BREC 005 and BREC 045; or cons. of instr.*

BREC 157. Multi-Media Authoring 3 sem. hrs.

Study of electronic media within the context of training/learning systems. Multi-media authoring software used to design, produce and evaluate instructional lessons. Offered every spring. *Prereq: Jr. stndg. and BREC 156; or cons. of instr.*

BREC 164. Television Criticism 3 sem. 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. Offered every fall.

BREC 168. Independent Projects in Broadcast and Electronic Communication 1-3 sem. hrs.

Communication 1-3 sem. hrs. Student projects in designated areas of special interest. *Prereq: Consent required; consent of unit coordinator.*

BREC 170. Radio Programming 3 sem. 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. Offered every spring term.

BREC 171. Television Programming

3 sem. 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. Offered occasionally.

BREC 172. Broadcast Sales and Promotion

3 sem. 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. Offered occasionally.

BREC 183. Early History of Broadcasting

3 sem. 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. Offered every fall term.

BREC 184. American Television:**1946–Present** 3 sem. 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. Offered every spring term.

BREC 186. Communication and Social Issues of the Internet 3 sem. hrs.

This course 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. The course culminates with the presentation of a major original research project. Offered every spring term.

BREC 189. Public Policy in**Telecommunications** 3 sem. 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. Offered every fall term.

BREC 193. Internship in Broadcast and Electronic Communication 0-1 sem. hrs.

Observation, participation, and experience in a radio, television, cable, or corporate setting. Augmented with selected readings, papers or conferences with adviser. Offered every term. *Prereq: Consent required; consent of unit coordinator. S/U grade assessment.*

BREC 194. Special**Institute/Workshop/Project** 1-3 sem. hrs.**BREC 195. Independent Study** 1-3 sem. hrs.

Prereq: Consent required; consent of unit coordinator.

BREC 196. Seminar in Broadcast and**Electronic Communication** 1-3 sem. hrs.

Special subjects of seminar to be announced in the *Timetable of Classes*. Variable topics. Offered occasionally.

BREC 197. Topics in Broadcast and**Electronic Communication** 1-3 sem. hrs.

Special topics in broadcast and electronic communication to be announced in the *Timetable of Classes*. Includes extensive screening and/or other activities. Lecture/lab format. Offered occasionally.

BREC 199. Senior Thesis 1-3 sem. hrs.

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Offered every term. *Prereq: Consent required; consent of unit coordinator.*

COMMUNICATION (COMM)

*William R. Burleigh and E.W. Scripps**Professor: Elliott**Professor and Gretchen and Cyril Colnick**Chair in Communication: Soley**Lecturer: Trueblood***COMM 011. Contemporary Presentation**

3 sem. 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. Offered every semester.

COMM 020. Media in Society 3 sem. 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. Offered every term.

▲ COMM 021. Introduction to Visual Communication 3 sem. 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. Offered every semester.

COMM 101. International Study in**Communication** 0-3 sem. hrs.

Structured travel and study programs in International Communication. Program includes special advising, reading, and a required paper. Offered every term. *Prereq: Consent required; consent of associate dean. Approved for full-time study at another college/university abroad, but will NOT be certified as full-time by Marquette University. S/U grade assessment.*

COMM 110. Co-op/Internship Work Period

0 sem. hrs.

Intensive internship demanding extensive hours throughout the term directly related to the student's academic area. Enrollment in this course qualifies student as full-time status.

Prereq: Jr. stdng. and cons. of dept. ch. and consent required; consent of academic area internship director and associate dean.

COMM 123. Statistical Reasoning, the Media and Current Events 3 sem. hrs.

This course is not a traditional statistics course. The emphasis is on statistical reasoning as it is applied to current events and media fare, specifically, how to interpret, evaluate critically, and understand statistically-based information in news, advertising and other popular media. Techniques for clear verbal and graphic presentation of quantitative information. Emphasis on group discussion. Offered occasionally.

COMM 160. Mass Media and the American Family 3 sem. 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. Offered every spring term. *Prereq: Jr. stdng.*

COMM 161. Ethical Problems of Mass Communications 3 sem. hrs.

The practice of journalism and mass communications as ordered by moral principles. Offered every term. *Prereq: Jr. stdng. and PHIL 104.*

COMM 162. International Communication 3 sem. 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. Offered annually. *Prereq: Jr. stdng.*

COMM 164. Introduction to Survey Research Methods 3 sem. hrs.

Study of the principles, techniques, and problems in designing, conducting, and analyzing scientific research which employs a questionnaire or interview schedule. Major topics: study design, conceptualization, item construction, sampling, data collection, reliability and validity of measurement, analysis and interpretation of data. Knowledge of statistics helpful. Offered spring term in even-numbered years. *Prereq: Jr. stdng; MATH 060 or SOCI 060 or PSYC 060 recommended but not required as prerequisites.*

COMM 165. Media Law 3 sem. 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 pro-

professionals. Offered every term. *Prereq: Jr. stndg.*

COMM 166. Mass Communication Theory and Research 3 sem. hrs.

Theoretical and methodological considerations involved in mass media research. Examines quantitative and qualitative approaches within the context of the media as social institutions. Offered every fall. *Prereq: Jr. stndg; or cons. of instr.*

COMM 167. Race and Gender Issues in Mass Media 3 sem. 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. Offered annually. *Prereq: Jr. stndg.*

COMM 177. Media Management 3 sem. 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. Offered every spring term.

COMM 181. Media and Politics 3 sem. 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. Offered fall semester in even numbered years. *Prereq: Jr. stndg. and POSC 020.*

COMM 190. Communication Undergraduate International Exchange 0 sem. hrs.

Study abroad as part of an international student exchange program. Upon approval, students are enrolled in a college or university abroad as a full-time student for a term or a year. Course credits transfer to Marquette. *Prereq: Approval by College of Communication*

COMM 193. Internship in Communication 0-3 sem. hrs.

Provides students with the opportunity to apply theories, skills, and techniques in communication. *Prereq: Consent required; consent of associate dean. S/U grade assessment.*

COMM 195. Independent Study 1-3 sem. hrs. Offered every term. *Prereq: Consent required; consent of associate dean.*

COMM 196. Seminar in Communication 1-3 sem. hrs.

Special topics of seminar to be announced in the *Timetable of Classes*. Variable topics. Offered occasionally.

COMM 199. Senior Thesis 1-3 sem. hrs. The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Offered every term. *Prereq: Consent required; consent of associate dean.*

COMMUNICATION STUDIES (CMST)

Professor: Shuter

Associate Professor: Goldzwig, Turner

Assistant Professor: Bonewits, Meyer

Visiting Assistant Professor: Kempf

Lecturer: Carey, Inman, Mansur, McCarthy, Schoenfeld, Voell

CMST 010. Introduction to Communication 3 sem. 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. Offered every term.

CMST 012. Public Speaking 2 sem. 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. Offered every term.

CMST 014. Oral Interpretation of Literature 3 sem. hrs.

Fundamentals and practice of interpretation by using representative literary forms. Offered occasionally.

CMST 050. Debate/Forensic Practicum 1-2 sem. hrs.

CMST 052. Introduction to Small Group Communication 3 sem. 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. Offered every term.

CMST 053. Argumentation 3 sem. 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. Offered every term.

CMST 054. Introduction to Communication Theory and Research 3 sem. hrs.

Surveys major theoretical approaches to communication studies and will introduce students to basic research methods in the field. Emphasis will be on reading research reports analytically. Offered every term.

CMST 061. Nonverbal Communication 3 sem. hrs.

Examines the varied approaches, channels, and functions of nonverbal behavior in human interaction. Sensitizes students to the pervasiveness of controversial issues in and origins of nonverbal communication. Explores theoretical and popular issues as well as relationships between verbal and nonverbal systems. Offered occasionally.

CMST 078. Communication Approaches to Interviewing 3 sem. 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. Offered annually.

CMST 081. Listening 3 sem. hrs.

Explores current and past approaches to listening, readability/listenability issues, recall tests, training and development techniques, silence, human information processing issues, and perceptual biases. Listening techniques for comprehension, evaluation, and empathy are explored. The role of listening in various contexts is explored. Offered occasionally. *Prereq: CMST 010.*

CMST 121. Principles and Methods of Teaching Speech Communication 3 sem. hrs.

Examines the theory and practice of teaching speech communication in secondary schools. Areas include public speaking, interpersonal communication, small group communication, and mass communication. Minimum 30-hour clinical experience required. Offered occasionally. *Prereq: Enrolled in Education and EDUC 079.*

CMST 124. Directing Speech Activities 3 sem. hrs.

Theory and practice in the organization and management of co-curricular speech activities in high school and college. Offered occasionally.

CMST 131. Interpersonal Communication 3 sem. 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. Offered every term. *Prereq: CMST 010.*

CMST 132. Organizational Communication 3 sem. 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. Offered annually.

CMST 133. Group Dynamics 3 sem. hrs.

Examines dynamics of small groups integral to understanding group communication. An advanced groups' class, it examines such topics as cohesiveness, risky shift, cross-national behavior, and social loafing. Small group diagnostic tools are also explored. Offered occasionally. *Prereq: CMST 052.*

CMST 134. Communication and Conflict 3 sem. 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. Offered every other year.

CMST 135. Communication Approaches to Training and Development 3 sem. 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. Offered annually.

CMST 136. Managerial Communication 3 sem. 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. Offered occasionally.

CMST 137. Gender and Communication 3 sem. 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). Offered annually.

CMST 140. Intercultural Communication 3 sem. 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. Offered annually.

CMST 141. Cross-Cultural Communication in the United States 3 sem. 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. Offered annually.

CMST 142. Communicating in Multinational Organizations 3 sem. 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. Offered occasionally.

CMST 144. Leadership and Communication 3 sem. 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. Offered occasionally.

CMST 145. Family Communication 3 sem. hrs.

Introduces communication phenomena in the family setting. Examines how communication affects the development, maintenance, and enhancement of family relations. Offered annually.

CMST 146. Health Communication 3 sem. 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. Offered annually.

CMST 148. Diffusion of Innovations: The Role of Communication in Technological Change 3 sem. 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 150. Philosophy of Communication 3 sem. 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. Offered occasionally.

CMST 154. Persuasion 3 sem. hrs.

Surveys theories, principles, and practices of persuasion. Special emphasis on the social, psychological and cultural study of influence. Offered every term. *Prereq: CMST 010.*

CMST 155. Business and Professional Speaking 3 sem. hrs.

Explores and offers practice in the types of oral communication faced in organizational settings. The emphasis is on professional presentations. Offered occasionally.

CMST 156. Classical Rhetorical Theory 3 sem. 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. Offered occasionally. *Prereq: CMST 010 and CMST 154; or cons. of instr.*

CMST 157. Modern Rhetorical Theory and Criticism 3 sem. 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. Offered occasionally. *Prereq: CMST 010 and CMST 154; or cons. of instr.*

CMST 160. Rhetoric of Social Movements 3 sem. 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. Offered occasionally. *Prereq: CMST 010 and CMST 154; or cons. of instr.*

CMST 165. Ethics in Human Communication 3 sem. 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. Offered occasionally.

CMST 166. Freedom of Speech 3 sem. 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. Offered occasionally.

CMST 167. Communication and the Legal Process 3 sem. 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. Offered occasionally.

CMST 168. Independent Project in Communication Studies 1-3 sem. hrs.

Prereq: Consent required; consent of unit coordinator.

CMST 170. Communication and Urban Families 3 sem. 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. Offered occasionally. *Prereq: CMST 010 and CMST 131.*

CMST 193. Internship in Communication Studies 1-3 sem. hrs.

Internship in Communication and Rhetorical Studies provides students with the opportunity to apply theories, skills, and techniques in communication as believed appropriate within specific organizational settings. *Prereq: CMST 010 and CMST 012 and CMST 052 and CMST 053 and consent required; consent of unit coordinator. Plus three upper division CMST credits. S/U grade assessment.*

CMST 194. Special**Institute/Workshop/Project** 1-3 sem. hrs.**CMST 195. Independent Study** 1-3 sem. hrs.Offered every term. *Prereq: Consent required; consent of unit coordinator.***CMST 196. Seminar in Communication****Studies** 1-3 sem. hrs.Special subjects of seminar to be announced in the *Timetable of Classes*. Variable topics. Offered occasionally.**CMST 199. Senior Thesis** 1-3 sem. hrs.The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Offered every term. *Prereq: Consent required; consent of unit coordinator.*

JOURNALISM (JOUR)

*Professor: Bovee (Emeritus), Griffin, Staudacher (Emeritus)**Lucius W. Nieman Professor: Leonard (Emeritus), Seib**Associate Professor: Garner, Scotton, Thorn**Assistant Professor: Webb**Adjunct Instructor: Mueller (Student Media**Adviser)**Lecturer: Altstiel, Czernicki, Franzen, Jones, Kenner, Perlick, Rummier, Salsini, Thomas-Lynn, Steinbach***JOUR 001. Practicum in Student Publications**

1 sem. 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 008. News Media Writing 3 sem. hrs.Principles and extensive practice in writing various forms and types of news for print and broadcast media based on sets of facts, documents, printed speeches, press releases and the like. Information sources and fact verification. News selection, newsroom organization, reportorial responsibilities. Readings in outstanding reportage. Offered every term. *Prereq: ENGL 001 or equivalent.***JOUR 010. Reporting** 3 sem. hrs.Principles and extensive practice in gathering and writing news from a beat and from live events such as meetings, speeches, and trials. Interviewing, verification of information, multiple sources, and backgrounding. Reporting strategies and techniques. Responsibilities of the journalist. Readings in outstanding reportage. Offered every term. *Prereq: ADPR 008; or JOUR 008.***JOUR 020. Basic Photography** 3 sem. 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 and lab. Offered every term. Camera rental optional.

JOUR 100. Publications Editing 3 sem. hrs.Editing principles and practices for newspapers, magazines, brochures and on-line publication. Students work on stories and articles suitable to each medium, write headlines, crop photographs, etc. News judgment and wire services. Offered every term. *Prereq: JOUR 010; or ADPR 180; or ENGL 104; or Jr. stndg.***JOUR 110. Persuasive Writing** 3 sem. 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. Offered every fall term. *Prereq: Jr. stndg. and JOUR 010 or equivalent.***JOUR 111. Article Writing** 3 sem. hrs.Writing a range of features for newspapers and magazines, from short stories to profiles, using narrative nonfiction and literary journalism techniques. Offered every term. *Prereq: Jr. stndg. and JOUR 010 or equivalent.***JOUR 112. Critical Writing** 3 sem. 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. Offered every spring term. *Prereq: Jr. stndg. and JOUR 010 or equivalent.***JOUR 120. Photojournalism** 3 sem. hrs.Intermediate black-and-white photography course, emphasizing the special demands of shooting for publications. Photo assignments on technical principles and wide range of journalistic applications. Caption writing and picture editing included. Also requires shooting and editing short and extended photo essays. History of photojournalism discussed, along with legal and ethical questions photojournalists must face. Offered occasionally. Camera rental optional. *Prereq: Jr. stndg. and JOUR 020; or Jr. stndg. and consent required; consent of unit coordinator.***JOUR 150. Newspaper Design and Production** 3 sem. hrs.Fundamentals of newspaper design and production. Students develop design skills and familiarity with design elements through study and execution of various newspaper design problems. Offered every fall term. *Prereq: JOUR 100; Computer workshop or demonstrated proficiency on the Macintosh computer with QuarkXPress.***JOUR 151. Magazine Design and Production** 3 sem. 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. Offered every spring term. *Prereq: JOUR 100; Computer workshop or demonstrated proficiency on the Macintosh computer with QuarkXPress.***JOUR 152. Online Editing and Design** 3 sem. hrs.

Fundamental principles of processing and managing information in verbal and visual forms for Web publication. An emphasis on the special

editing and design issues created by the online environment and internet technology. Legal and ethical issues on Internet. Offered every fall term. *Prereq: JOUR 150; or JOUR 151; or ADPR 143; Computer workshop or demonstrated proficiency on Macintosh with Dreamweaver, Photoshop, and Illustrator.***JOUR 155. News and Information Design** 3 sem. hrs.Fundamentals of designing news and information content in visual forms for publications and Web pages. Visual components of newspaper "packages;" charts, graphs, statistical data; Web page and online information design. Principles of digital imaging. Students work on design problems related to visual presentation of information in newspaper, magazine, and Web page formats. Offered every spring term. *Prereq: Jr. stndg. and JOUR 100; or Jr. stndg. and ADPR 143; Computer workshops or demonstrated proficiency on Macintosh computer with QuarkXPress.***JOUR 163. History of American News Media** 3 sem. 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. Offered every fall term. *Prereq: Jr. stndg.***JOUR 168. Independent Project in Journalism** 1-3 sem. hrs.*Prereq: Jr. stndg. and consent required; consent of unit coordinator.***JOUR 171. Communication of Urban Issues** 3 sem. 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. Offered fall semester in even-numbered years. *Prereq: BREC 147; or JOUR 175; or cons. of instr.***JOUR 172. Religious Journalism** 3 sem. 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 press. Offered fall semester in odd-numbered years. *Prereq: Jr. stndg. and JOUR 175; or Jr. stndg. and BREC 147.***JOUR 173. Health, Science and Environmental Communication** 3 sem. 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. Usually offered spring term of odd-numbered calendar years.

JOUR 174. Business and Economic Journalism 3 sem. 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. Offered spring term in even-numbered years. *Prereq: Jr. stndg. and JOUR 175; or Jr. stndg. and BREC 147.*

JOUR 175. Public Affairs Reporting 3 sem. hrs.

Analysis of the community with a view to the problems and opportunities for the public affairs reporter. Practice in reporting the political, public, administrative, financial and commercial, labor, social, welfare, and educational affairs of the community. Offered every term. *Prereq: Jr. stndg. and JOUR 010 and POSC 020; or cons. of instr.*

JOUR 177. Computer-Assisted Reporting 3 sem. hrs.

Advanced reporting strategies focusing on interpretation and analysis of trends, issues, events and problems in public affairs. Use of computers to investigate and research public records and to analyze data for depth reports. Offered every fall. *Prereq: BREC 147; or JOUR 175; or cons. of instr.*

JOUR 182. News Media and Foreign Policy 3 sem. 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 185. School Publications 3 sem. hrs.

The special nature and functions of school publications. Their educational value. Projects in planning publications to fit their nature and functions. The role of the publication adviser. Lecture and laboratory. Offered occasionally. *Prereq: Jr. stndg. and JOUR 010; or Jr. stndg. and BREC 045 or equivalent.*

JOUR 193. Internship in Journalism 0-3 sem. 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 total credits only by majors within the dept. *Prereq: Jr. stndg. and consent required; consent of unit coordinator. S/U grade assessment.*

JOUR 194. Special Institute/Workshop/Project 1-3 sem. hrs.

Prereq: Jr. stndg.

JOUR 195. Independent Study 1-3 sem. hrs.

Offered every term. *Prereq: Jr. stndg. and consent required; consent of unit coordinator.*

JOUR 196. Seminar in Journalism 1-3 sem. hrs.

Specific subjects of seminars to be announced in the *Timetable of Classes*. Variable topics. Offered occasionally. *Prereq: Jr. stndg.*

JOUR 197. Special Topics in Journalism 3 sem. hrs.

Study of, and practice in, various areas of specialized work such as regional, small community, union, organization journalism, and the special interest press. Offered occasionally. *Prereq: Jr. stndg. and BREC 147; or Jr. stndg. and JOUR 175.*

JOUR 199. Senior Thesis 1-3 sem. hrs.

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Offered every term. *Prereq: Jr. stndg. and consent required; consent of unit coordinator.*

PERFORMING ARTS (PEAR)

Artistic Director: P. Ravel

Associate Professor: Price

Adjunct Associate Professor: Krajec

Adjunct Assistant Professor: Campbell,

Grainger, Hudson-Mairet

Visiting Adjunct Assistant Professor: Juranek, Loeffler-Bell

Lecturer: Benson-Hora, Contorno (Director of Bands/Orchestra), Kilmurry, McGilligan, D. Ravel, Ross, Schneider, Wutz

Dance (DANC)

DANC 038. Disciplines of Movement 2 sem. hrs.

Introduction to movement disciplines like Alexander, Feldenkrais, and Tai Chi for performers. Training geared toward relaxation, loss of inhibition, and ease of flexibility

DANC 039. Theatre Dance 2 sem. 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. Offered every other year.

DANC 040. Tap Dance 1 2 sem. hrs.

Emphasis will be placed on fundamental tap dance techniques. No previous tap dance needed. Offered every fall term.

DANC 041. Tap Dance 2 2 sem. hrs.

Continuation of DANC 040. Offered occasionally. *Prereq: DANC 040 or equivalent.*

DANC 042. Beginning Dance Technique 1 2 sem. hrs.

Emphasis will be placed on fundamental modern and jazz techniques. No previous dance needed. Offered every fall term.

DANC 043. Beginning Dance Technique 2 2 sem. hrs.

Continuation of DANC 042. Offered every spring term. *Prereq: DANC 042 or equivalent.*

DANC 050. Composition: Improvisational Sources 3 sem. hrs.

The examination of improvisational techniques and structures from a dance/movement perspective. The course is a combination of practical and analytical perspectives of improvisational movement. *Prereq: cons. of instr.*

DANC 111. Staging Musical Productions 2 sem. hrs.

Advanced staging techniques for theatre and dance. *Prereq: DANC 039 or equivalent and DANC 041 or equivalent.*

DANC 194. Special Institute/Workshop/Project 1-3 sem. hrs.

Project 1-3 sem. hrs.

DANC 195. Independent Study 1-3 sem. hrs.

Offered every term. *Prereq: Consent required; consent of artistic director.*

DANC 196. Seminar in Dance 1-3 sem. hrs.

Specific subjects of seminars to be announced in the *Timetable of Classes*. Variable topics. Offered occasionally.

DANC 199. Senior Thesis 1-3 sem. hrs.

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Offered every term. *Prereq: Consent required; consent of artistic director.*

Film (FILM)

FILM 110. History of Film 3 sem. 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. Offered annually.

FILM 111. Issues in Film Studies 3 sem. 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 *Timetable of Classes*. Offered occasionally.

FILM 115. Film as Communication 3 sem. 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 116. Film as Art 3 sem. 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 117. Film and Popular Culture 3 sem. 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. Offered occasionally.

FILM 118. Economic and Social Aspects of Film 3 sem. 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. Offered occasionally.

FILM 166. The Documentary Film Tradition 3 sem. hrs.

Study of the documentary film in America and Europe, covering most of the significant films and styles, including Lumiere, Flaherty, Grierson, the propaganda films of the Thirties and Forties, the compilation film, Wiseman, Ophuls and contemporary direct cinema. The "reality films" viewed and discussed touch on most of the personal and social problems of the 20th century. Course subtitle to be announced in the *Timetable of Classes*. Offered occasionally.

FILM 194. Special Institute/Workshop/Project 1-3 sem. hrs.

FILM 195. Independent Study 1-3 sem. hrs. Offered every term. *Prereq: Consent required; consent of unit coordinator.*

FILM 196. Seminar in Film 1-3 sem. hrs. Specific subjects of seminars to be announced in the *Timetable of Classes*. Variable topics. Offered occasionally.

FILM 199. Senior Thesis 1-3 sem. hrs. The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Offered every term. *Prereq: Consent required; consent of unit coordinator.*

Music (MUSI)

MUSI 010. University Chorus 0 sem. hrs. Open to all students who qualify through auditions held during fall registration week. At least one concert per term. Offered annually. Audition

MUSI 012. Liturgical Choir 0 sem. hrs. Choir members concentrate on Liturgical music in rehearsals and concert performances. *Prereq: Consent required; Consent of Liturgical Choir Director. S/U grade assessment.*

MUSI 015. Chamber Choir 0 sem. hrs. A 16-voice ensemble performing madrigals and jazz selections. Performs in concert with other MU ensembles at special functions. Singers skilled in sight-singing and in foreign languages encouraged to audition. audition required

MUSI 016. Gospel Choir 0 sem. hrs. Open to all students who qualify through audition held during fall registration week. Offered annually. Audition

MUSI 020. Symphony Orchestra—Theatre Orchestra 0 sem. 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. Offered every term.

MUSI 030. Symphonic Band 0 sem. 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. Offered every term. Annual fall audition is held for chair placement only. No one is denied admission.

MUSI 031. Jazz Ensemble 0 sem. hrs. Open to all interested members of the symphonic band and orchestra. Literature to include hits from the big band swing era through current jazz standards. Currently there are two complete jazz ensembles on campus rehearsing at 4 p.m. and 7 p.m. on Tuesdays. Performances include at least one formal concert per term. Offered every term. *Prereq: MUSI 020 which must be taken concurrently; or MUSI 030 which must be taken concurrently.*

MUSI 050. Introductory Music Theory 2 sem. 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. Offered every term.

MUSI 051. Appreciation of Music 2 sem. 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. Offered every term.

MUSI 052. Wind Band History and Analysis 2 sem. 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. Offered every term. *Prereq: MUSI 030; or cons. of instr.*

MUSI 060. Vocal Music Practicum 0 sem. hrs. Private vocal techniques includes sight reading, correct phrasing and good tone, the rudiments of music, vocal scales. Advanced vocal techniques will include repertoire from European arts songs, operatic arias, and musical theatre. May be taken more than once. Offered every term. *Prereq: THAR major; or TTHA major.*

MUSI 115. The Phonograph Record and Popular Culture 3 sem. hrs.

An examination of the history of the record industry from Edison to stereo. Technology, distribution systems and the development of a mass "popular" market. A study of the record as a medium of in-group and mass communications, socialization, and culture transmission. Elements of basic discography. Offered occasionally.

MUSI 152. History of the Musical in America 3 sem. 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. Offered every Fall term. Credit may be applied towards a Film minor.

MUSI 154. History of Jazz 3 sem. hrs. Traces the colorful history of Americas 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. Offered annually.

MUSI 194. Special Institute/Workshop/Project 1-3 sem. hrs. Project 1-3 sem. hrs.

MUSI 195. Independent Study 1-3 sem. hrs. Offered every term. *Prereq: Consent required; consent of unit coordinator.*

MUSI 196. Seminar in Music 1-3 sem. hrs. Specific subjects of seminars to be announced in the *Timetable of Classes*. Variable topics. Offered occasionally.

MUSI 199. Senior Thesis 1-3 sem. hrs. The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Offered every term. *Prereq: Consent required; consent of unit coordinator.*

Theatre Arts (THAR)

THAR 010. Acting 1—Fundamental Technique 3 sem. 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. Offered every fall. *Prereq: THAR Major; or THAR Minor; or consent required; consent of artistic director. Lab required.*

THAR 011. Acting 2—Characterization 3 sem. hrs. A continuation of the work begun in THAR 010; 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. Offered spring term of even numbered years. *Prereq: THAR 010; Lab required*

THAR 012. Make-Up 2 sem. hrs.

The fundamental techniques of stage makeup through using a variety of materials and exercises. Usually offered in fall.

THAR 016. Stagecraft 3 sem. hrs.

The basic techniques of stagecrafts including construction of scenery and props, painting and rigging, lighting and running of shows. Offered every fall. Lab and crew required for two productions.

THAR 023. Basic Costume Technology 3 sem. 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. Offered every fall. Lab and crew required for two productions.

THAR 026. Voice and Movement for Stage 3 sem. 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. Offered fall term. *Prereq: THAR 010.*

THAR 028. Voice and Speech 1 3 sem. 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. Offered spring term. *Prereq: THAR 026.*

THAR 030. Acting 3—Advanced Scene Study 3 sem. 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. Offered fall term. *Prereq: THAR 011; Lab required.*

THAR 031. Acting 4—Shakespeare 3 sem. 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. Lab required. Offered spring term. *Prereq: THAR 030; Lab required.*

▲THAR 050. Theatre Appreciation 3 sem. 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. Offered every term.

THAR 051. Acting for Non-Theatre Majors 3 sem. 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. Offered every term.

THAR 052. Play Analysis 1 3 sem. hrs.
Analyzes tragedy and comedy. Emphasis on performance, drama theory, and historical context of plays. Offered fall term.

THAR 118. Aspects of Theatrical Design 3 sem. hrs.

Collaborative communication techniques for theatre artists. The exploration of the designer/director/performer relationship through development of visual and three-dimensional communication skills. Offered fall term. *Prereq: Soph. stdng. and THAR 016; or cons. of instr.*

THAR 119. Scenographic Techniques 3 sem. hrs.

A study of rendering and mechanical drawing as it relates to theatrical design. An exploration of color media and perspective. Offered spring term. *Prereq: THAR 016; or cons. of instr.*

THAR 120. Lighting Design 3 sem. hrs.
The study and practice of theatrical lighting script analysis, research and planning techniques. Culminates in a realized collaboration. Offered spring term. *Prereq: THAR 016 and THAR 118.*

THAR 121. Crafts for the Theatre 3 sem. 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. Offered spring term, even numbered years.

THAR 122. Costume Design 3 sem. 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 occasionally. *Prereq: THAR 118; or cons. of instr.*

THAR 123. History of Clothing 1 3 sem. 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. Offered occasionally.

THAR 124. Advanced Costume Techniques 3 sem. 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. Offered spring of even numbered years. *Prereq: THAR 023; or cons. of instr.*

THAR 125. History of Clothing 2 3 sem. 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. Offered occasionally.

THAR 126. Play Direction 3 sem. hrs.
The principles of play direction as a creative and interpretative art on the stage. Offered every fall term. *Prereq: THAR 010 and cons. of instr.*

THAR 127. Scenery Design 3 sem. hrs.
Study of the principles and practices of designing scenery for the stage. Offered fall term of even numbered years. *Prereq: THAR 118; or cons. of instr.*

THAR 128. Advanced Play Direction 3 sem. hrs.

Study of interpretative styles of play direction, rehearsal techniques, audience analysis, and contemporary trends. Opportunity to test principles in assigned laboratory productions. Offered occasionally. *Prereq: THAR 126; or cons. of instr.*

THAR 129. Period Styles 3 sem. 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. Offered occasionally

THAR 130. Voice and Speech 2 2 sem. hrs.
Continued voice and speech work which builds upon the previous two classes and includes strengthening contact with the emotional impulse of linking the actor's voice and speech to both contemporary and classical texts. Elements of interpretation which combine voice and speech work including: scansion, phrasing, emphasis, pauses, pitch, range, quality, concentration and rhythm. Note: This class is structured to meet as a class for the first half of the term and as individual tutorials for the second half. Offered fall term. *Prereq: THAR 028.*

THAR 132. Acting 5—Professional Auditions and Career Preparation 3 sem. 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. Offered fall term. *Prereq: THAR 030; or THAR 031; Lab required.*

THAR 134. Musical Theatre Practicum 3 sem. hrs.

The Musical Theatre Practicum is the continued development of the students' singer/actor skills. The course centers on the creation of a musical revue for public performance. The performance will integrate acting, vocal and movement skills developed in beginning and intermediate courses. Offered spring term. *Prereq: Consent of artistic director.*

THAR 136. Voice—Dialects 2 sem. hrs.
Study and practice of phonetics and commonly used stage dialects including: Standard English, Cockney, Irish, American, Southern, Brooklynese and French. Offered spring term. *Prereq: THAR 130.*

THAR 140. Playwriting 3 sem. hrs.

Study of the structure and execution of dramatic scripts for theatre. Assignments to write and analyze scenes and one act plays. Offered occasionally

THAR 150. History of Theatre 3 sem. hrs.

A chronological survey of theatre history from its origins in 1914. Particular emphasis paid to major periods of theatrical achievement, studying conjectural and documented styles in acting, design and production methods. Offered spring term odd years. *Prereq: Soph. stndg.*

THAR 152. Play Analysis 2 3 sem. hrs.

Analyzes melodrama, farce, reactions against realism, social comedy, and theatre of the absurd. Similar content emphases as THAR 052. Offered spring term.

THAR 153. Contemporary Theatre 3 sem. 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. Offered occasionally. *Prereq: Soph. stndg.*

THAR 160. Theatre Management 2 sem. hrs.

Study and practice of Theatre Management and Publicity. Offered occasionally. Lab requirement in production and/or stage management.

THAR 168. Independent Project in Theatre Arts 0-3 sem. hrs.

Offered every term. *Prereq: Consent required; consent of artistic director.*

THAR 170. Principles and Methods of Teaching Performing Arts 3 sem. hrs.

Investigation of methods used in teaching Theatre Arts. Offered occasionally. *Prereq: EDUC 079; and admission to the School of Education.*

THAR 192. Career and Preparation Studies Seminar 1 sem. 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. Offered spring term. *Prereq: THAR Major; S/U grade assessment.*

THAR 193. Internship in Theatre Arts

0-3 sem. hrs.

Prereq: Consent required; consent of artistic director. S/U grade assessment.

THAR 195. Independent Study 1-3 sem. hrs.

Offered every term. *Prereq: Consent required; consent of artistic director.*

THAR 196. Seminar in Theatre Arts

1-3 sem. hrs.

Specific subjects of seminars to be announced in the *Timetable of Classes*. Variable topics. Offered occasionally.

THAR 199. Senior Thesis 1-3 sem. hrs.

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Offered every term. *Prereq: Consent required; consent of artistic director.*

School of Education

The School of Education is committed to preparing teachers and educational specialists who uphold the Jesuit traditions of *cura personalis* (care for the whole person), social justice, academic excellence, ethical behavior, and service to the urban community. The sequence of professional courses offered by the School of Education is designed to support these traditions by integrating the theoretical and practical dimensions of teaching and by providing opportunities for students to experience the implementation of both dimensions in Milwaukee area public, private, and parochial schools. Further, the importance of subject matter knowledge, culturally and developmentally relevant pedagogy, and technological applications in enhancing student learning is emphasized throughout coursework and field experiences. Observation, tutoring, and small group instruction in a wide variety of settings are integral to the program, providing a solid foundation for successful student teaching experiences and entry to the profession.

The teacher preparation programs offered by the School of Education have been developed to satisfy the University Core of Common Studies requirements and to meet the Wisconsin Department of Public Instruction Certification Code. Students who are preparing to teach are expected to demonstrate knowledge, skills, and dispositions in ten areas which have been identified by the Department of Public Instruction and in two additional areas which have been specified by the School of Education: commitment to social justice and use of technology. Assessment of student outcomes occurs at multiple intervals throughout the program. In order to ensure that students are well-prepared to enter the teaching profession, School of Education course goals and objectives are carefully aligned with proficiencies associated with quality teaching.

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. The bachelor of arts or bachelor of science degree is conferred by the college in which the student's major department is located. Thus the major and curriculum requirements of that college must be met and the academic standards of that college maintained. The School of Education provides the professional course sequence, administers admission and retention in its programs and field experiences, and recommends for certification.

The degrees of master of education, master of arts, and doctor of philosophy are offered by the School of Education through the Marquette University Graduate School. It also offers the master of arts in teaching degree for students of Spanish and the specialist certificates directed toward educational leadership and instructional leadership. Details for these programs are contained in the *Graduate Bulletin*.

ADMISSION REQUIREMENTS

Students interested in the Teacher Education Program must apply for formal admission to the School of Education through the Office of Teacher Education. The admission and retention requirements at Marquette University meet the requirements established by the Wisconsin Department of Public Instruction. Students are advised to apply during the term in which they are enrolled in EDUC 008, Introduction to Teaching in a Diverse Society.

Students must meet the following requirements to be admitted to the Teacher Education Program:

- Achieve a Q.P.A. of 2.500 in a minimum of 40 credits of undergraduate course work.
- Obtain passing scores on the Praxis I Academic Skills Test.
- Complete EDUC 008 and EDUC 048 with a minimum grade of C.
- Demonstrate mastery of written and oral communication as evidenced in ENGL 001, ENGL 002, or COMM 011, EDUC 008 and EDUC 048.
- Demonstrate entry-level technology skills as defined by the School of Education.

Applications for admission to the program are reviewed frequently. Students who do not meet the state mandated 2.500 Q.P.A. requirement can apply and 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) can appeal admission under the 10 percent rule providing 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 quality point average or passed the Praxis I assessment.

RETENTION IN PROGRAM

Students must retain a cumulative quality point average of 2.500 after they are admitted to the program. The Wisconsin Department of Public Instruction requires that students achieve an overall 2.500 Q.P.A., and a 2.750 Q.P.A. in their major, minor, and professional education sequence and obtain passing scores on a content area test to student teach and to be licensed. The School of Education does not count 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 admissions or retention should contact the Office of Teacher Education. While the admission requirements apply to all students, the School of Education reserves the right to deny admission or retention to students who demonstrate unprofessional behavior.

ACCREDITATION

The School of Education is a member of the American Association of Colleges for Teacher Education. All programs are accredited by the North Central Association and by the State of Wisconsin. Undergraduate programs are accredited by 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 elementary/middle school sequence, the middle/secondary sequence, and the majors and minors named in the following pages. A student who satisfactorily completes a professional sequence and an academic major, who demonstrates mastery of the School of Education standards as evidenced in a portfolio, and who obtains passing scores on a content area test can be recommended for certification in the state of Wisconsin. Completion of course work is a necessary but not sufficient condition for certification. The professional judgement of faculty, supervisors, and the Director of Teacher Education enter into the final decision. A student must complete an application for certification and pay the required fee. Applications are available in the Office of Teacher Education, Schroeder Complex, 150.

Changes required by the Wisconsin Department of Public Instruction and state law 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 should recognize that reciprocal certification agreements with other states change from time to time. The student should write

directly to the department of education of the state involved, requesting a copy of the certification requirements of the state and application procedures for licensure or access information via the internet. If specific certification courses other than those required for Wisconsin are noted, such courses should be elected by the student during the junior and senior years. Students are also encouraged to discuss other state certification requirements with their advisers or the Director of Teacher Education.

Certification levels available to Marquette students are elementary/middle (grades 1-8) and middle/secondary (grades 6-12). Students should check with the Office of Teacher Education for the requirements and availability of each level for the different majors and minors.

The following statistics attest to the quality in terms of employability of the Marquette teacher education program. At the close of the 2002-2003 academic year, 85.2 percent of the School of Education students who completed the program obtained employment in the teaching profession, 51.9 percent remained in Wisconsin, and 37 percent chose employment in urban public schools.

FIELD EXPERIENCES

Education students participate in field experiences with public, private, and parochial schools in the Milwaukee area. The Department of Public Instruction requires a minimum of 100 hours to be completed prior to student teaching. Of these, the School of Education requires that 50 hours must be in diverse settings with students or adults whose backgrounds differ from that of the field student. Marquette University's program exceeds the minimum requirements of the state with specific hours being assigned to various courses. Students must meet Marquette's requirements.

PARTNERSHIP SCHOOLS

Marquette University's School of Education has entered into partnership agreements with four schools in the Milwaukee Public School district: Lloyd Street School, Sarah Scott Middle School for the Health Sciences, Wisconsin Conservatory of Lifelong Learning, and Roosevelt Middle School of the Arts. These schools serve as laboratories for field placements and student teaching in exchange for access to university resources and opportunities for faculty and staff development.

FACILITIES

EDUCATIONAL RESOURCES CENTER

The School of Education maintains an Educational Resources Center in Schroeder Complex, 199. Equipped with a video conferencing unit, a smart cart, and computer stations, the center supports instructional technology for students and faculty. Collections of the ERC include sample curriculum guides from many cities and states, sample copies of elementary, middle, and secondary school textbooks, pamphlet material related to issues in teaching and other materials related to teaching and learning. Materials in the ERC may be used by any student in the university with priority for the needs of students enrolled in the School of Education.

PARENTING CENTER

The Parenting Center offers outreach training and services to the community on parenting young children. The center is supported by the School of Education. The center sponsors classes for parents, conducts workshops/training for agency personnel who work with parents, and provides other parent/child services. The center also conducts research on parenting and offers a course on parenting to undergraduate and graduate students. The Parenting Center is located in the William and Evelyn Krueger Parent and Child Care Center at 749 N. 17th Street.

THE RALPH C. HARTMAN LITERACY AND LEARNING CENTER

The Hartman Literacy and Learning Center is a facility within the School of Education which supports undergraduate and graduate literacy related programs. The center library houses a children's literature collection which is used by the School 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 160 (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.

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.

CURRICULA INFORMATION

ELEMENTARY/MIDDLE SCHOOL TEACHER PREPARATION (GRADES 1-8)

The elementary/middle school education program leads to a teaching license for grades 1 through 8. Students who select this program must meet the School of Education's admission and retention requirements and must complete the following components:

1. The University Core of Common Studies
2. An academic major from the College of Arts and Sciences or the College of Communication
3. The college curriculum requirements for the college of their major with the inclusion/addition of specific state-mandated general education requirements
4. The professional education course sequence

Students who intend to complete the teacher education program through the Marquette University School of Education are strongly urged to meet with the Director of Undergraduate Advising in the Office of Teacher Education as early as possible to avoid delays in their program.

(1) UNIVERSITY CORE OF COMMON STUDIES REQUIREMENTS, MAJOR CURRICULUM REQUIREMENTS, AND STATE MANDATED GENERAL EDUCATION REQUIREMENTS

A. COLLEGE OF ARTS AND SCIENCES — BACHELOR OF ARTS

Recommended majors for elementary/middle school teacher education students include:

| | |
|---------|-------------------|
| English | Political Science |
| French | Psychology |
| German | Religious Studies |
| History | Sociology |
| Latin | Spanish |

Students who intend to earn a Bachelor of Arts Degree in the College of Arts and Sciences must fulfill the following requirements:

Rhetoric (R) **6 credits**
ENGL 001 and ENGL 002*

Mathematical Reasoning (MR) **6 credits**
Any MR course approved for the UCCS* except PRST 060, and an additional 3 credits fulfilled with MATH education sequence:
MATH 030, 031, and 032

Individual and Social Behavior (ISB) **9 credits**
POSC 020*, EDUC 078, and 3 additional credits
in ECON, PSYC, or SOCI

Diverse Cultures (DC) **3 credits**
EDUC 008*

Literature and Performing Arts (LPA) **6 credits**
Any literature course approved for the UCCS* and
EDUC literacy sequence: EDUC 110, 120, and 160

Histories of Cultures and Societies (HCS) **6 credits**
HIST 006* and HIST 001* or HIST 002*

| | |
|---|---------------------|
| Science and Nature (SN) | 8 credits |
| ARSC 010* and ARSC 011* | |
| Human Nature and Ethics (HNE) | 9 credits |
| PHIL 050*, PHIL 104*, and PHIL (EDUC) 158 | |
| Theology (T) | 9 credits |
| THEO 001*, THEO 100-119 elective from approved UCCS list*, and THEO 120-199 elective | |
| Additional College Curriculum Requirements | 0-14 credits |
| Foreign Language (FOLA) competence through the intermediate college level. | |
| Senior Experience | 3 credits |

* fulfills UCCS and College Curriculum Requirements

▲ Indicates UCCS courses throughout the bulletin.

B. COLLEGE OF ARTS AND SCIENCES — BACHELOR OF SCIENCE

Bachelor of Science majors include:

| | |
|-------------|-----------|
| Biology | Chemistry |
| Mathematics | Physics |

Students who intend to earn a Bachelor of Science Degree in the College of Arts and Sciences must fulfill the following requirements:

| | |
|--|--------------------|
| Rhetoric (R) | 6 credits |
| ENGL 001* and ENGL 002* | |
| Mathematical Reasoning (MR) | 6 credits |
| Any MR course approved for the UCCS* except PRST 060, and an additional 3 credits fulfilled with MATH education sequence: MATH 030, 031, and 032 | |
| Individual and Social Behavior (ISB) | 3 credits |
| POSC 020* | |
| Diverse Cultures (DC) | 3 credits |
| EDUC 008* | |
| Literature and Performing Arts (LPA) | 6 credits |
| Any literature course approved for the UCCS in this area* and EDUC literacy sequence: EDUC 110, 120, and 160 | |
| Histories of Cultures and Societies (HCS) | 6 credits |
| HIST 006* and HIST 001* or HIST 002* | |
| Science and Nature (SN) | 8 credits |
| ARSC 010* and ARSC 011* | |
| Human Nature and Ethics (HNE) | 9 credits |
| PHIL 050*, PHIL 104*, and PHIL (EDUC) 158 | |
| Theology (T) | 9 credits |
| THEO 001*, THEO elective 100-119 from approved UCCS list*, and THEO elective 120-199 | |
| Additional College Curriculum Requirements | 0-8 credits |
| Foreign Language 0-2 courses | |
| Senior experience | 3 credits |

* fulfills UCCS and College Curriculum Requirements

▲ Indicates UCCS courses throughout the bulletin.

C. COLLEGE OF COMMUNICATION – BACHELOR OF ARTS

Majors offered by the College of Communication include:

| | | |
|-----------------------|------------|--------------|
| Communication Studies | Journalism | Theatre Arts |
|-----------------------|------------|--------------|

Students who intend to earn a Bachelor of Arts Degree in the College of Communication must fulfill the following requirements:

| | |
|-------------------------------|------------------|
| Rhetoric (R) | 6 credits |
| ENGL 001 and COMM 011* | |

| | |
|---|--------------------|
| Mathematical Reasoning (MR) | 3 credits |
| MATH 060* | |
| Individual and Social Behavior (ISB) | 6 credits |
| POSC 020* and EDUC 078 | |
| Diverse Cultures (DC) | 3 credits |
| EDUC 008* | |
| Literature and Performing Arts (LPA) | 9 credits |
| THAR 050*, literature and EDUC literacy sequence | |
| Histories of Cultures and Societies (HCS) | 6 credits |
| HIST 006* and HIST 001* or HIST 002* | |
| Science and Nature (SN) | 8 credits |
| ARSC 010* and ARSC 011* | |
| Human Nature and Ethics (HNE) | 12 credits |
| PHIL 001, PHIL 050*, PHIL 104*, and PHIL (EDUC) 158 | |
| Theology (T) | 6 credits |
| THEO 001*, THEO elective 100-119 from approved UCCS list* | |
| Additional College Curriculum Requirements | 0-8 credits |
| Foreign Language — competence through FOLA 001 and 002 or FOLA 010 | |
| CMST 010, COMM 011, COMM 020 | 9 credits |

* fulfills UCCS and College Curriculum Requirements

▲ Indicates UCCS courses throughout the bulletin.

(2) PROFESSIONAL EDUCATION SEQUENCE

To be eligible for an elementary/middle school teaching license, students must complete the following courses offered by the School of Education: EDUC 008, EDUC 048, EDUC 078, EDUC 079, EDUC 088, EDUC 100, EDUC 110, EDUC 120, EDUC 128, EDUC 140, EDUC 158, EDUC 160 and EDUC 181. Students must also complete MATH 030, MATH 031, and MATH 032 offered by the Mathematics Department. Students must check with their advisers in the School of Education in regard to sequence and admission requirements. Usually, EDUC 181, Student Teaching, 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.

**BACHELOR OF ARTS, COLLEGE OF ARTS AND SCIENCES
RECOMMENDED ELEMENTARY/MIDDLE (GRADES 1-8)
TEACHER PREPARATION CURRICULUM AND SUGGESTED TERM SCHEDULE**

The following schedule represents a generic major in Arts and Sciences, which allows students to complete graduation requirements in four years and return to student teach in an additional semester. Under certain circumstances, it may be possible for students to complete the entire program in four years. Please consult with a College of Arts and Sciences adviser for requirements related to specific majors.

Freshman

INTRODUCTION TO TEACHING AND SCHOOLING IN A DIVERSE SOCIETY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|----------------|-----------|
| ARSC 010 | 4 | ARSC 011 | 4 |
| EDUC 008 | 3 | EDUC 048 | 3 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| FOLA 001 | 4 | FOLA 002 | 4 |
| HIST 001 or 002 | 3 | HIST 006 | 3 |
| | <hr/> 17 | | <hr/> 17 |

Sophomore

FOCUS ON LEARNERS IN A DIVERSE SOCIETY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|------------------------------------|-----------|
| EDUC 078 | 3 | ECON, PSYC, or SOCI elective | 3 |
| FOLA 003 | 3 | EDUC 079 | 3 |
| LIT elective | 3 | EDUC 088 | 3 |
| UCCS – MR (MATH) elective | 3 | FOLA 004 | 3 |
| PHIL 050 | 3 | THEO 001 | 3 |
| Major | 3 | Major | 3 |
| | <hr/> 18 | | <hr/> 18 |

Junior

FOCUS ON DEEPENING CONTENT KNOWLEDGE

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|-----------------------------|-----------|
| EDUC 110 | 4 | EDUC 120 | 4 |
| EDUC 140 | 3 | MATH 031 | 3 |
| MATH 030 | 3 | POSC 020 | 3 |
| PHIL 104 | 3 | THEO 120-199 elective | 3 |
| THEO 100-119 elective | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| | <hr/> 19 | | <hr/> 19 |

Senior

FOCUS ON DEVELOPMENTALLY AND CULTURALLY RESPONSIVE PEDAGOGY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|-------------------------|-----------|
| EDUC 100 | 3 | EDUC 158 | 3 |
| EDUC 128 | 3 | EDUC 160 | 4 |
| MATH 032 | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| Major | 3 | Senior experience | 3 |
| | <hr/> 15 | | <hr/> 16 |

Fifth year

| FIRST TERM | SEM. HRS. |
|-----------------------------------|-----------|
| EDUC 181 – Student Teaching | 12 |

Total credits: 151

**BACHELOR OF SCIENCE, COLLEGE OF ARTS AND SCIENCES
RECOMMENDED ELEMENTARY/MIDDLE (GRADES 1-8)
TEACHER PREPARATION CURRICULUM AND SUGGESTED TERM SCHEDULE**

The following schedule represents a generic major in Arts and Sciences, which allows students to complete graduation requirements in four years and return to student teach in an additional semester. Under certain circumstances, it may be possible for students to complete the entire program in four years. Please consult with a College of Arts and Sciences adviser for requirements related to specific majors.

Freshman

INTRODUCTION TO TEACHING AND SCHOOLING IN A DIVERSE SOCIETY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|------------------------|-----------|
| EDUC 008 | 3 | EDUC 048 | 3 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| HIST 001 or 002 | 3 | HIST 006 | 3 |
| UCCS – MR | 3 | Major | 3 |
| <hr/> | | <hr/> | |
| 15-16 | | 15-16 | |

Sophomore

FOCUS ON LEARNERS IN A DIVERSE SOCIETY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------------|-----------|----------------|-----------|
| ARSC 010 | 4 | ARSC 011 | 4 |
| EDUC 078 | 3 | EDUC 079 | 3 |
| PHIL 050 | 3 | EDUC 088 | 3 |
| POSC 020 | 3 | THEO 001 | 3 |
| UCCS – LPA, literature required | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| <hr/> | | <hr/> | |
| 19 | | 19 | |

Junior

FOCUS ON DEEPENING CONTENT KNOWLEDGE

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|----------------|-----------|
| EDUC 110 | 4 | EDUC 120 | 4 |
| EDUC 140 | 3 | MATH 031 | 3 |
| MATH 030 | 3 | PHIL 104 | 3 |
| THEO 100-119 elective | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| <hr/> | | <hr/> | |
| 19 | | 19 | |

Senior

FOCUS ON DEVELOPMENTALLY AND CULTURALLY RESPONSIVE PEDAGOGY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|----------------|-----------|
| EDUC 128 | 3 | EDUC 100 | 3 |
| MATH 032 | 3 | EDUC 158 | 3 |
| THEO 120-199 elective | 3 | EDUC 160 | 4 |
| Major | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| Senior experience | 3 | | |
| <hr/> | | <hr/> | |
| 18 | | 16 | |

Fifth year

| First term | SEM. HRS. |
|-----------------------------------|-----------|
| EDUC 181 – Student Teaching | 12 |

Total credits: 152-154

**BACHELOR OF ARTS, COLLEGE OF COMMUNICATION
RECOMMENDED ELEMENTARY/MIDDLE (GRADES 1-8)
TEACHER PREPARATION CURRICULUM AND SUGGESTED TERM SCHEDULE**

The following schedule represents a generic major in Communication Studies, which allows students to complete graduation requirements in four years and return to student teach in an additional semester. Under certain circumstances, it may be possible for students to complete the entire program in four years. Please consult with a College of Communication adviser for requirements related to specific majors.

Freshman

INTRODUCTION TO TEACHING AND SCHOOLING IN A DIVERSE SOCIETY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|----------------|-----------|
| CMST 010 | 3 | COMM 020 | 3 |
| ENGL 001 | 3 | COMM 011 | 3 |
| FOLA 001 | 4 | FOLA 002 | 4 |
| HIST 001 or 002 | 3 | PHIL 001 | 3 |
| EDUC 008 | 3 | EDUC 048 | 3 |
| | <hr/> 16 | | <hr/> 16 |

Sophomore

FOCUS ON LEARNERS IN A DIVERSE SOCIETY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|----------------|-----------|
| ARSC 010 | 4 | ARSC 011 | 4 |
| EDUC 078 | 3 | EDUC 079 | 3 |
| MATH 060 | 3 | EDUC 088 | 3 |
| THAR 050 | 3 | HIST 006 | 3 |
| Major | 3 | PHIL 050 | 3 |
| | | Major | 3 |
| | <hr/> 16 | | <hr/> 19 |

Junior

FOCUS ON DEEPENING CONTENT KNOWLEDGE

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|------------------|-----------|
| EDUC 110 | 4 | EDUC 120 | 4 |
| EDUC 140 | 3 | MATH 031 | 3 |
| MATH 030 | 3 | POSC 020 | 3 |
| THEO 001 | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| Major | 3 | Literature | 3 |
| | <hr/> 19 | | <hr/> 19 |

Senior

FOCUS ON DEVELOPMENTALLY AND CULTURALLY RESPONSIVE PEDAGOGY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|-----------------------------|-----------|
| EDUC 100 | 3 | EDUC 158 | 3 |
| EDUC 128 | 3 | EDUC 160 | 4 |
| MATH 032 | 3 | THEO 100-119 elective | 3 |
| PHIL 104 | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| Major | 3 | | |
| | <hr/> 18 | | <hr/> 16 |

Fifth year

| FIRST TERM | SEM. HRS. |
|-----------------------------------|-----------|
| EDUC 181 – Student Teaching | 12 |

Total credits: 151

MIDDLE SCHOOL/SECONDARY TEACHER PREPARATION (GRADES 6-12)

The middle school/secondary education program leads to a teaching license for grades 6 through 12. Students who select this program must meet the School of Education's admission and retention requirements and must complete the following components:

1. The University Core of Common Studies
2. An academic **teaching** major from the College of Arts and Sciences or the College of Communication
3. The curriculum requirements for the college of their major with the inclusion/addition of specific general education requirements for Wisconsin certification
4. The professional education sequence

The state approved teaching majors and minors at Marquette have been cooperatively developed by the School of Education and the colleges and departments of the university. All students intending to teach at the middle school/secondary level must complete at least one teaching major. Students are encouraged to earn certification in a second teaching major or in one or more teaching minors. To be certified to teach in a second subject area, Wisconsin requires nine credits in the second subject area in addition to the required credits in the major area.

Students who intend to complete the teacher education program through the Marquette University School of Education are strongly urged to meet with the Director of Undergraduate Advising in the Office of Teacher Education as early as possible to avoid delays in their program.

(1) UNIVERSITY CORE OF COMMON STUDIES REQUIREMENTS, MAJOR CURRICULUM REQUIREMENTS, AND STATE MANDATED GENERAL EDUCATION REQUIREMENTS

A. COLLEGE OF ARTS AND SCIENCES — BACHELOR OF ARTS

Teaching majors offered by the College of Arts and Sciences include:

| | |
|---------|-------------------|
| English | Political Science |
| French | Psychology |
| German | Religious Studies |
| History | Sociology |
| Latin | Spanish |

Broad field Social Science Teaching License Extension (See note following requirements.)

Students who intend to earn a Bachelor of Arts Degree in the College of Arts and Sciences must fulfill the following requirements:

Rhetoric (R) **6 credits**
ENGL 001 and ENGL 002*

Mathematical Reasoning (MR) **6 credits**
Any MR course approved for the UCCS* except PRST 060, and
3 additional credits fulfilled with any MATH/COSC

Individual and Social Behavior (ISB) **9 credits**
3 credits fulfilled with any UCCS – ISB approved course,* EDUC 078,
and 3 additional credits in ECON, POSC, PSYC, or SOCI (must be in
an area other than that selected to fulfill UCCS requirement)

Diverse Cultures (DC) **3 credits**
EDUC 008*

Literature and Performing Arts (LPA) **6 credits**
3 credits fulfilled with any UCCS – literature approved course* and
3 credits fulfilled with any literature course

Histories of Cultures and Societies (HCS) **6 credits**
HIST 001* or HIST 002* and 3 credits
Fulfilled with HIST elective approved by the College of Arts and Sciences

Science and Nature (SN) **8 credits**
ARSC 010* and ARSC 011*

Human Nature and Ethics (HNE) **9 credits**
PHIL 050*, PHIL 104*, and PHIL (EDUC) 158

Theology (T) **9 credits**
THEO 001*, THEO 100-119 elective from approved UCCS list*, and
THEO 120-199 elective

Additional College Curriculum Requirements 0-14 credits

Foreign Language (FOLA) competence through the intermediate college level.

* fulfills UCCS and College Curriculum Requirements

▲ Indicates UCCS courses throughout the bulletin.**SPECIAL NOTE: BROAD FIELD SOCIAL SCIENCE TEACHING LICENSE EXTENSION**

To broaden career opportunities, students are encouraged to examine the broad field social science license extension. It includes courses in economics, history, political science, psychology, sociology, and geography (please see ANTH 110). The student completes a teaching major in an approved social science area and seven additional courses from other social science disciplines. Students must check with a School of Education advisor regarding specific course options. Students who complete the extended program earn Wisconsin licensure in their teaching major and in broad field social science, enabling them to teach “fusion” courses such as civics, contemporary problems, and social problems. In addition, students who complete the broad field social science program may earn Wisconsin licensure in any other social science area with a minimum of nine credits in that area.

B. COLLEGE OF ARTS AND SCIENCES — BACHELOR OF SCIENCE

Teaching majors offered by the College of Arts and Sciences include:

Biology Chemistry Mathematics Physics

Broad field science (Please see special note which follows requirements.)

Students who intend to earn a Bachelor of Science Degree in the College of Arts and Sciences must fulfill the following requirements:

Rhetoric (R) 6 credits

ENGL 001 and ENGL 002*

Mathematical Reasoning (MR) 6 credits

Any MR course approved for the UCCS* except PRST 060, and
3 additional credits fulfilled with any MATH/COSC course

Individual and Social Behavior (ISB) 3 credits

3 credits fulfilled with any UCCS – ISB approved course*

Diverse Cultures (DC) 3 credits

EDUC 008*

Literature and Performing Arts (LPA) 6 credits

3 credits fulfilled with any UCCS – literature approved course* and
3 credits fulfilled with any literature course

Histories of Cultures and Societies (HCS) 6 credits

HIST 001* or HIST 002* and
3 credits fulfilled with any history or social science course

Science and Nature (SN) 8 credits

ARSC 010* and ARSC 011*

Human Nature and Ethics (HNE) 9 credits

PHIL 050*, PHIL 104*, and PHIL (EDUC) 158

Theology (T) 9 credits

THEO 001*, THEO 100-119 elective from approved UCCS list*,
and THEO 120-199 elective

* fulfills UCCS and College Curriculum Requirements

▲ Indicates UCCS courses throughout the bulletin.**SPECIAL NOTE: BROAD FIELD SCIENCE TEACHING MAJOR WITH TEACHING MINORS IN BIOLOGY, CHEMISTRY, OR PHYSICS**

Students who complete the program 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 (their minor area)

Interested students should see the chairs of biology, chemistry, or physics, their advisors, and the School 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 their science area of study. In addition, those completing the broad field science program may earn licensure in any of the three science areas with a minimum of nine credits through the Wisconsin Department of Public Instruction.

Courses common to all broad field science majors are BIOL 001, 002, and 090, CHEM 001, 002, 023, and 024, PHYS 008 and 009, and PHIL 130. In addition,

1. Biology minors take BIOL 100, 125, 135, 172, PHYS 001 and 002, COSC 050, and MATH 073 or 080.
2. Chemistry minors take CHEM 114 and an upper division chemistry elective of at least 2 credits, BIOL 100 and 125, PHYS 001 and 002, COSC 050, and MATH 073 or 080.
3. Physics minors take PHYS 001 and 002, or 003 and 004, and 104, 105, and MATH 080, 081, and 082.

C. COLLEGE OF COMMUNICATION – BACHELOR OF ARTS

Teaching majors offered by the College of Communication include:

Communication Studies Journalism Theatre Arts

Students who intend to earn a Bachelor of Arts Degree in the College of Communication must fulfill the following requirements:

Rhetoric (R) **6 credits**
ENGL 001 and COMM 011*

Mathematical Reasoning (MR) **3 credits**
MATH 060*

Individual and Social Behavior (ISB) **6 credits**
3 credits fulfilled with any UCCS – ISB approved course* and EDUC 078

Diverse Cultures (DC) **3 credits**
EDUC 008*

Literature and Performing Arts (LPA) **9 credits**
THAR 050* and 6 credits fulfilled with any literature courses

Histories of Cultures and Societies (HCS) **6 credits**
HIST 001* or HIST 002* and 3 additional credits fulfilled with any
HIST or UCCS – HCS approved course

Science and Nature (SN) **8 credits**
ARSC 010* and ARSC 011*

Human Nature and Ethics (HNE) **12 credits**
PHIL 001, PHIL 050*, PHIL 104*, and PHIL (EDUC) 158

Theology (T) **6 credits**
THEO 001*, THEO elective 100-119 from approved UCCS list*

Additional College Curriculum Requirements

Foreign Language – competence through FOLA 002 **0-8 credits**
CMST 010, COMM 011, COMM 020 **9 credits**

* fulfills UCCS and College Curriculum Requirements

▲ Indicates UCCS courses throughout the bulletin.

(2) PROFESSIONAL EDUCATION SEQUENCE

To be eligible for a middle school/secondary teaching license, students must complete the following courses in the School of Education: EDUC 008, EDUC 048, EDUC 078, EDUC 079, EDUC 088, EDUC 125, EDUC 128, EDUC 158, EDUC 176, and one advanced methods course in their teaching major. Students must check with their advisers in the School of Education in regard to sequence and admission requirements. Usually, EDUC 176, Student Teaching, 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.

**BACHELOR OF ARTS, COLLEGE OF ARTS AND SCIENCES
RECOMMENDED MIDDLE/SECONDARY (GRADES 6-12)
TEACHER PREPARATION CURRICULUM AND SUGGESTED TERM SCHEDULE**

This schedule represents a generic major leading to a Bachelor of Arts Degree. Please consult with a College of Arts and Sciences adviser for requirements related to specific majors.

Freshman

INTRODUCTION TO TEACHING AND SCHOOLING IN A DIVERSE SOCIETY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-----------|----------------------------|-----------|
| ARSC 010 | 4 | ARSC 011 | 4 |
| EDUC 008 | 3 | EDUC 048 | 3 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| FOLA 001 | 4 | FOLA 002 | 4 |
| HIST 001 or 002 | 3 | History elective | 3 |
| | <hr/> 17 | | <hr/> 17 |

Sophomore

FOCUS ON LEARNERS IN A DIVERSE SOCIETY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|------------------------------|-----------|
| EDUC 078 | 3 | EDUC 079 | 3 |
| FOLA 003 | 3 | EDUC 088 | 3 |
| PHIL 050 | 3 | FOLA 004 | 3 |
| UCCS – MR elective | 3 | MATH/COSC elective | 3 |
| UCCS – ISB elective | 3 | THEO 001 | 3 |
| Major | 3 | Major | 3 |
| | <hr/> 18 | | <hr/> 18 |

Junior

FOCUS ON DEEPENING CONTENT KNOWLEDGE

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|-------------------------------|-----------|
| ECON, POSC, PSYC, or SOCI elective | 3 | EDUC 125 | 3 |
| EDUC 128 | 3 | Fine arts elective | 3 |
| THEO 100-119 elective | 3 | PHIL 104 | 3 |
| UCCS – LPA, literature course required | 3 | Literature elective | 3 |
| Major | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| | <hr/> 18 | | <hr/> 18 |

Senior

FOCUS ON DEVELOPMENTALLY AND CULTURALLY RESPONSIVE PEDAGOGY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|--------------------|-----------|
| EDUC 158 | 3 | EDUC 176 | 12 |
| THEO 120-199 elective | 3 | | |
| Advanced methods | 3 | | |
| Major | 3 | | |
| Major | 3 | | |
| Senior experience | 3 | | |
| | <hr/> 18 | | |

Total credits: 136

**BACHELOR OF SCIENCE, COLLEGE OF ARTS AND SCIENCES
RECOMMENDED MIDDLE/SECONDARY (GRADES 6-12)
TEACHER PREPARATION CURRICULUM AND SUGGESTED TERM SCHEDULE**

This schedule represents a generic major leading to a Bachelor of Science Degree. Please consult with a College of Arts and Sciences adviser for requirements related to specific majors.

Freshman

INTRODUCTION TO TEACHING AND SCHOOLING IN A DIVERSE SOCIETY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-------------|---------------------------|-------------|
| EDUC 008 | 3 | EDUC 048 | 3 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| Foreign Language | 3/4 | Foreign Language | 3/4 |
| HIST 001 or 002 | 3 | UCCS – ISB elective | 3 |
| Major | 3 | Major | 3 |
| | <hr/> 15/16 | | <hr/> 15/16 |

Sophomore

FOCUS ON LEARNERS IN A DIVERSE SOCIETY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------|-----------|--------------------------|-----------|
| ARSC 010 | 4 | ARSC 011 | 4 |
| EDUC 078 | 3 | EDUC 079 | 3 |
| PHIL 050 | 3 | EDUC 088 | 3 |
| UCCS – MR elective | 3 | MATH/COSC elective | 3 |
| THEO 001 | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| | <hr/> 19 | | <hr/> 19 |

Junior

FOCUS ON DEEPENING CONTENT KNOWLEDGE

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|--|-----------|
| EDUC 128 | 3 | EDUC 125 | 3 |
| THEO 100-119 elective | 3 | Literature elective | 3 |
| UCCS – LPA, literature course required | 3 | History or social science elective | 3 |
| Fine arts elective | 3 | PHIL 104 | 3 |
| Major | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| | <hr/> 18 | | <hr/> 18 |

Senior

FOCUS ON DEVELOPMENTALLY AND CULTURALLY RESPONSIVE PEDAGOGY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|----------------|-----------|
| Advanced methods | 3 | EDUC 176 | 12 |
| EDUC 158 | 3 | | |
| THEO 120-199 elective | 3 | | |
| Major | 3 | | |
| Major | 3 | | |
| Senior experience | 3 | | |
| | <hr/> 18 | | |

Total credits: 134-136

**BACHELOR OF ARTS, COLLEGE OF COMMUNICATION
RECOMMENDED MIDDLE/SECONDARY (GRADES 6-12)
TEACHER PREPARATION CURRICULUM AND SUGGESTED TERM SCHEDULE**

This schedule represents a generic major in Communication Studies. Please consult with a Communication Studies adviser for requirements related to specific majors.

Freshman

INTRODUCTION TO TEACHING AND SCHOOLING IN A DIVERSE SOCIETY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|----------------|-----------|
| EDUC 008 | 3 | EDUC 048 | 3 |
| CMST 010 | 3 | COMM 011 | 3 |
| ENGL 001 | 3 | COMM 020 | 3 |
| FOLA 001 | 4 | FOLA 002 | 4 |
| HIST 001 or 002 | 3 | PHIL 001 | 3 |
| | <hr/> 16 | | <hr/> 16 |

Sophomore

FOCUS ON LEARNERS IN A DIVERSE SOCIETY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|----------------|-----------|
| ARSC 010 | 4 | ARSC 011 | 4 |
| EDUC 078 | 3 | EDUC 079 | 3 |
| MATH 060 | 3 | EDUC 088 | 3 |
| THAR 050 | 3 | PHIL 050 | 3 |
| Major | 3 | Major | 3 |
| | <hr/> 16 | | <hr/> 16 |

Junior

FOCUS ON DEEPENING CONTENT KNOWLEDGE

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-----------|-----------------------------|-----------|
| EDUC 128 | 3 | EDUC 125 | 3 |
| History elective | 3 | Literature elective | 3 |
| THEO 001 | 3 | THEO 100-119 elective | 3 |
| Literature elective | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| | <hr/> 18 | | <hr/> 18 |

Senior

FOCUS ON DEVELOPMENTALLY AND CULTURALLY RESPONSIVE PEDAGOGY

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|----------------|-----------|
| Advanced methods | 3 | EDUC 176 | 12 |
| EDUC 158 | 3 | | |
| PHIL 104 | 3 | | |
| Major | 3 | | |
| Major | 3 | | |
| Major | 3 | | |
| | <hr/> 18 | | |

Total credits: 130

HEALTH PROFESSIONS INSTRUCTOR: POST-SECONDARY CERTIFICATE: DENTAL HYGIENE/CLINICAL LABORATORY SCIENCE

Students who are enrolled in dental hygiene or clinical laboratory science programs or who are graduates of such programs may apply for admission to the program leading to the certification for post-secondary instructor in these programs. The certificate program is directed toward assisting those who seek teaching positions as instructors in those professions. Toward that end, a professional education background and initial practicum experiences are offered to assist the development of pre-service instructors in dental hygiene and clinical laboratory science at the post-secondary level.

With the recommendation of the director of the health profession, those who wish to join this program must enroll in the School of Education. Information on that procedure can be obtained from the chair of dental hygiene, the chair of clinical laboratory science, or in the Office of Teacher Education, Schroeder Complex, 150. Earning this certificate depends upon the successful completion of the following courses: EDUC 048, 078 (or PSYC 103, 121, or 122), 079, 158, EDPL 215, and DEHY 179 or METE 189.

COACHING COURSES

Students enrolled in a teaching program in the School of Education may seek to enhance their job opportunities by enrolling in coaching courses: EDUC 063, 072, and 073. Further, some students, whether or not enrolled in the School of Education, may find the courses beneficial to their professional or personal development. Students who would like to enroll in additional course work in coaching are urged to consider the courses offered by the Department of Exercise Science.

COURSE DESCRIPTIONS

Dean and Associate Professor: Augenstein
Professor: Fox, Leslie, Lowe, Pink
Distinguished Professor: Fuller
Professor Emeriti: Dupuis, Ivanoff, Nordberg, Thompson

Associate Professor: Bardwell, Schweizer
Assistant Professor: Burant, Chubbuck, Eckman, Evans, McClure, Wattsjohnson, Whipp

Director of Teacher Education: Matthews
Coordinator of Undergraduate Admissions: McNamara
Coordinator of Field Placements and Licensure: Stang

*For those courses marked with an asterisk, a two- to three-hour time block between 8 a.m. and 3 p.m. one day each week must be kept free for the required field experience if there is no lab section in the *Schedule of Classes*. Mornings are preferred.

▲ EDUC 008. Introduction to Schooling in a Diverse Society 3 sem. 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. Offered every term.

▲ EDUC 048. Critical Inquiry into Contemporary Issues 3 sem. hrs.

Analysis and critique of current issues in elementary and secondary education. Skill development in research, communication, and critical inquiry needed to foster social justice in schools. Offered every term. *Prereq:* EDUC 008.

EDUC 063. Principles, Problems, and Psychology of Coaching 2 sem. 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 072. Theory and Practice in Coaching Individual and Dual Sports 2 sem. hrs.

Principles and problems of coaching individual and dual sports. Major sports in these areas are reviewed. Open to all students in the university.

EDUC 073. Theory and Practice in Coaching Team Sports 2 sem. hrs.

Principles and problems of coaching team sports. All major team sports are reviewed. Open to all students in the university.

EDUC 078. Psychology of Human Development in Children and Adolescents in a Diverse Society 3 sem. hrs.

Critical examination of physical, social, emotional, moral and cognitive development of children and adolescents, including variables (gender, socioeconomic status, race, ethnicity, language). Offered every term.

EDUC 079. Using Technology for Learning and Assessment 3 sem. hrs.

Application of major theories of learning to instructional planning and assessment. Skill development in a variety of technological tools that can be used to enhance learning, instruction and assessment. Offered every term.

EDUC 088. Children and Youth with Exceptional Needs 3 sem. 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 078 or equivalent.

EDUC 100. Integrating the Arts Across the Curriculum 3 sem. 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. Offered every term. *Prereq:* EDUC 079; *Application to the School of Education*.

EDUC 102. Principles of Peer Facilitation Among College Students 1-3 sem. hrs.

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 104. Parenting and Family Issues 3 sem. hrs.

Theoretical, research, and applied topics in parenting. Parenting infants through adolescents. Includes family communication systems, child and adolescent development, cultural child-rearing practices, intergenerational parenting, legal issues, parenting exceptional children, and current topics.

EDUC 109. Measurement in Education 3 sem. hrs.

An orientation to history and development of the testing movement, selection and administration of tests, principles of classroom test construction, and interpretation of test results. Offered occasionally.

*EDUC 110. Teaching Elementary Reading, Language Arts, and Children's Literature 1 4 sem. 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 and concurrent enrollment in Math 030 required. Offered every term. *Prereq:* *Application to the School of Education required.*

*EDUC 120. Teaching Elementary Reading, Language Arts, and Children's Literature 2 4 sem. 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 and concurrent enrollment in Math 031 required. Offered every term. *Prereq:* EDUC 110; *Admission to the School of Education.*

*EDUC 125. Literacy in the Content Areas 3-4 sem. 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. Offered every term. Admission to the School of Education required.

EDUC 128. Teaching in the Middle School 3 sem. hrs.

Foundations, methods, and strategies for teaching at the middle school level. Field experience required. Offered every term. *Prereq:* EDUC 078 and EDUC 079; *Admission to the School of Education required.*

EDUC 140. Teaching Elementary Level Science 3 sem. 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. Offered spring term only. *Prereq:* EDUC 079; *Admission to the School of Education required.*

EDUC 145. Teaching Middle/Secondary Social Sciences 3 sem. hrs.

Application of teaching methods to social studies in middle and high schools. Field experience required. Offered fall term only. *Prereq:* EDUC 079; *Admission to the School of Education required.*

EDUC 155. Teaching Middle/Secondary Sciences 3 sem. 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. Offered Spring Term. *Prereq:* EDUC 079; *Admission to the School of Education required.*

EDUC 158. Philosophy of Education 3 sem. 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. Offered every term. *Prereq:* PHIL 050.

▲ Indicates UCCS courses

***EDUC 160. Practicum: Teaching Elementary Level Reading** 4 sem. 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. Offered every term. *Prereq: Consent required; Admission to the School of Education required; 3.0 average in EDUC 110 and 120.*

EDUC 165. Strategies in Religious Education 3 sem. 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. Offered occasionally. Open to all upper division students in the university. Admission to the School of Education required for Education students only.

EDUC 175. Student Teaching: Secondary 8-12 sem. hrs.

Full-day secondary school supervised student teaching Monday through Friday. Only EDUC 158 may be taken during the term of this practicum. Regular on-site visitation by university faculty. Student must apply for student teaching during the first three weeks of the term preceding the practicum. Offered every term. *Prereq: Consent required; Admission to the School of Education required. Advanced methods course(s). Consent of Office of Teacher Education. Weekly seminar required. S/U grade assessment. Fee.*

EDUC 176. Student Teaching: Middle/Secondary 12 sem. hrs.

Full day, full term of public or private school teaching, Monday through Friday. Only EDUC 158 may be taken during the term of this practicum. Regular on-site visitation by university faculty. Student teaching is split: half of the term at the middle school level and half of the term at the high school level. Weekly seminar required. S/U grade assessment. Fee. Offered every term. *Prereq: EDUC 128; Advanced methods course, admission to School of Education, and consent required.*

EDUC 177. Student Teaching: Middle/Secondary Bilingual 12 sem. hrs.

Full-day, full term of public or private school teaching, Monday through Friday. EDUC 158 may be taken during the term of this practicum experience. Regular on-site visits by university faculty. Student teaching is split: half of the term in a bilingual classroom and half of the term in a regular classroom. Weekly seminar required. S/U grade assessment. Fee. *Prereq: EDUC 128; Advanced methods course, admission to School of Education, and consent required.*

EDUC 180. Student Teaching: Elementary 12 sem. hrs.

Full-day elementary school supervised student teaching Monday through Friday. Only EDUC 158 may be taken during the term of this practicum. Regular on-site visitation by university faculty. Student must apply for student teaching during the first three weeks of the term preceding the practicum. Offered every term. *Prereq: Consent required; Admission to the School of Education required. Advanced methods course(s). Consent of Office of Teacher Education. Weekly seminar required. S/U grade assessment. Fee.*

EDUC 181. Student Teaching: Elementary/Middle 12 sem. hrs.

Full day, full term of public or private school teaching, Monday through Friday. Only EDUC 158 may be taken during the term of this practicum. Regular on-site visitation by university faculty. Student teaching is split: half of the term at the elementary school level and half of the term at the middle school level. Weekly seminar required. S/U grade assessment. Fee. Offered every term. *Prereq: EDUC 128; and Consent required; Admission to the School of Education required.*

EDUC 182. Student Teaching: Elementary/Middle Bilingual 12 sem. hrs.

Full-day, full term of public or private school teaching, Monday through Friday. EDUC 158 may be taken during the term of this practicum experience. Regular on-site visits by university faculty. Student teaching is split: half of the term in a bilingual classroom and half of the term in a regular classroom. Weekly seminar required. S/U grade assessment. Fee. *Prereq:*

EDUC 128; and consent required; Admission to the School of Education required. Advanced methods course(s).

***EDUC 187. Theory and Methods of Teaching Bilingual Learners in the Content Areas** 3 sem. hrs.

Emphasis on testing and evaluating abilities and needs of bilingual/bicultural learners and developing instructional strategies. Course component includes intensive field experience in bilingual elementary/middle or middle/secondary school. Middle/secondary students placed in major subject area. *Prereq: Admission to the School of Education required.*

EDUC 188. Foundations of Bilingual/Bicultural Education 3 sem. hrs.

Includes rationale, history, and survey of existing models. Emphasis on special problems of testing as it impacts on bilingual/bicultural education.

EDUC 192. Reading Instruction for School Service Personnel 3 sem. hrs.

Theories underlying the reading process are examined. Psychological, sociological and linguistic factors that influence the development of readers will be studied. Interrelationships of reading with writing and the other language arts and across all content areas will be investigated. In addition, study of the school-wide comprehensive reading and language arts curriculum will be included. *Prereq: Only for students in certification programs endorsed by the School of Education.*

EDUC 195. Independent Study 1-4 sem. hrs.

Readings on a particular problem or subject of interest to the student. A paper must be completed for each problem studied. Offered every term. *Prereq: Consent required*

EDUC 198. Special Topics in Education 1-4 sem. hrs.

Special topics in education as identified in the *Timetable of Classes*. Offered occasionally.

College of Engineering

The mission of the Marquette University College of Engineering is to prepare undergraduate and graduate students for successful careers based on a strong ethical and moral foundation, to advance the state of the art in engineering, to serve the professional and technical communities and 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

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 and Environmental Engineering, Electrical and Computer Engineering, and Mechanical and Industrial 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, in addition to computing and healthcare technologies management. The master of science in engineering management degree (M.S.E.M.) is also conferred. The doctoral degree is conferred for candidates in biomedical, civil, electrical and computer, and mechanical engineering. Details on the master's and doctoral programs are contained in the *Graduate Bulletin*.

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 and Environmental Engineering with majors in civil engineering and environmental engineering; the Department of Electrical and Computer Engineering with majors in computer engineering, electrical and electronic engineering, and electrical and computer engineering; the Department of Mechanical and Industrial Engineering with a major in mechanical engineering

ACCREDITATION

The College of Engineering is a member of the American Society for Engineering Education. Accreditation by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology is held for all engineering programs.

ADMISSION REQUIREMENTS

Applicants to the College of Engineering are expected to fulfill the admission requirements listed in the university section of this bulletin.

High school preparation should include a thorough grounding in mathematics, including algebra, plane and solid geometry, and trigonometry. A thorough background in the physical sciences is essential. Since an engineer's success depends to a considerable extent on an ability to express him or herself, knowledge of English is necessary. Further, an engineer must have a desire to know the basic truths behind natural phenomena, a genuine interest in mathematical analysis, design, research, and development.

The elements of algebra, geometry, and trigonometry, if included in a course of another title, will be acceptable. Furthermore, a year of advanced mathematics may be substituted for one-half unit of algebra and one-half of trigonometry. Four units of high school mathematics are expected for admission to the College of Engineering.

GRADUATION REQUIREMENTS

The degree bachelor of science in biomedical, civil, computer, electrical, industrial 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 C average or better in Marquette work.
- 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 a degree filed in the dean's office 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 and Environmental Engineering

Civil Engineering

Environmental Engineering

Department of Electrical and Computer Engineering

Computer Engineering

Electrical and Computer Engineering

Electrical and Electronic Engineering

Department of Mechanical and Industrial 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 bulletin section titled “The University Core of Common Studies.”

The implementation of the UCCS within each major is explicitly detailed in each department’s bulletin section. The following footnotes are referenced in the curriculum for each of the various majors:

- b University Core course
- c The Core Electives must satisfy University Core Requirements in the following four Knowledge Areas: Diverse Cultures, Histories of Cultures and Societies, Individual and Social Behavior, and Literature/Performing Arts. See 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 Core courses in the Theology Knowledge Area. See section on University Core of Common Studies.

Courses which satisfy both the UCCS and the College of Engineering curricula are outlined below:

| | |
|--|-------------------|
| Rhetoric (R) | 6 credits |
| ENGL 001, ENGL 002 | |
| Mathematical Reasoning (MR) | 8 credits |
| MATH 080, MATH 081 | |
| Individual and Social Behavior (ISB) | 3 credits |
| All UCCS courses | |
| Diverse Cultures (DC) | 3 credits |
| All UCCS courses | |
| Literature/Performing Arts (LPA) | 3 credits |
| All UCCS courses | |
| Histories of Cultures and Societies (HCS) | 3 credits |
| All UCCS courses | |
| Science and Nature (SN) | 16 credits |
| CHEM 001, CHEM 002, PHYS 003, PHYS 004 | |
| Human Nature and Ethics (HNE) | 6 credits |
| PHIL 050, PHIL 104 | |
| Theology (T) | 6 credits |
| THEO 001, Theology Elective | |

▲ Indicates UCCS courses throughout the bulletin.

New courses are approved for the UCCS each semester. For a regularly updated list of approved Core courses, please consult the Core of Common Studies Web site at www.marquette.edu/core.

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 dean’s office regulations. For College of Engineering policies, please refer to our Web site at www.eng.mu.edu.

ACADEMIC DISHONESTY

All students enrolled in College of Engineering classes are subject to the college’s policy and procedures on academic dishonesty. For a full description of this and other College of Engineering policies, please refer to our Web site at www.eng.mu.edu.

POLICY

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, students and administrators. Acts of academic dishonesty include but are not limited to the following:

1. The illegitimate use of materials, in any form, during a quiz or examination.
2. Copying answers from the quiz or examination paper of another student.
3. Plagiarizing or falsifying materials or information used in the completion of any assignment which is graded or evaluated as the student's individual effort. Plagiarism includes submitting as one's own the ideas or work of another, including the computer programs or material from the computer files of another, regardless of whether that information is used verbatim or in paraphrased form, and regardless of whether those ideas or that work is derived from published materials or from private materials of another person who either intentionally or unintentionally contributes to the act of plagiarism.
4. Obtaining, through theft, bribery, collusion, or otherwise improperly securing an examination paper prior to the time and date for the administration of the examination. Also, use of an examination paper previously administered (e.g. during an earlier semester) without the consent of the instructor who authored the examination.
5. 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.
6. Impersonating a candidate at an examination or availing oneself of such an impersonation.
7. Intentionally interfering with any person's scholastic work, for example, by damaging or stealing laboratory experiments or library materials.
8. It is presumed that material submitted by a student for an assignment is original to that assignment and, therefore, submitting the same work for more than one course without the consent of the instructors of each course in which the work is submitted is considered dishonest.
9. Aiding or abetting any such offenses.

ATTENDANCE

A. 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, attendance is mandatory for every exercise of a course in which a student is registered. Excessive absences may result in lower grades, or being withdrawn from a class for reason of absences with a WA grade.

B. Students registered in any course offered by the College of Engineering are bound by this attendance policy even if they are enrolled in another college, program, or division of the university. It is the responsibility of each student to know and follow the college's class attendance policy and any specific attendance regulations of his/her instructors.

C. In the case of an emergency absence (prolonged absence from class due to illness or other personal emergency), a student must inform the engineering office, which will keep a written record of such cases and inform the relevant instructors. Normally, the college office will not keep a record nor take any action unless such absences extend for one week or longer. For a full description of this and other College of Engineering policies, please refer to our Web site at www.eng.mu.edu.

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.

Request for permission to exceed 20 credit hours must be submitted for approval prior to registration to the respective departmental chair on forms provided by the dean's office.

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 in order 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 003, 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 250 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

| Freshman | | | Sophomore | | | Co-op Section | Junior | | | Pre-Senior | | | Senior | | | Approx. Total Work |
|----------|----|----|-----------|----|----|------------------|--------|----|----|------------|----|----|--------|----|----|-----------------------|
| | Fa | Sp | Su | Fa | Sp | | Su | Fa | Sp | Su | Fa | Sp | Su | Fa | Sp | |
| | S | S | V | S | S | A | S | W | S | W | S | W | S | W | S | 16 mos. |
| | S | S | V | S | S | B | W | S | W | S | W | S | W | S | S | 15 mos. |
| | S | S | V | S | S | C | V | S | W | S | W | S | W | S | S | 12 mos. |

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 subject to the rules of the company and under their direct supervision. 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.

ENGINEERING ETHICS AND VALUES (ENEV)

The goal of this program is to involve engineering students in a four-year 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.

Students in engineering may obtain a minor in engineering ethics and values by completing the following course requirements with a grade of C or better in each: PHIL 050, PHIL 104, THEO 001, SOCI 001 plus nine additional hours from the following list of courses: PHIL 105, PHIL 131, PHIL 132, THEO 170, THEO 175, SOCI 128. In addition to the above courses, a colloquium series is offered each term. Students are required to attend each of the 0-credit colloquia ENEV 001, ENEV 002, ENEV 003, ENEV 004, ENEV 005, and each of the one-credit colloquia ENEV 006, ENEV 007, ENEV 008. For information, see your faculty adviser or your department office.

PART-TIME STUDIES

The College of Engineering offers a part-time studies evening program in civil, electrical, mechanical and industrial engineering for students who qualify for admission with junior standing. The part-time evening program is not available to majors in biomedical engineering, computer engineering or environmental engineering.

Since many part-time students cannot, because of employment (and often family) responsibilities, carry more than two or three courses in any given term, course offerings in the evenings are scheduled on a planned two- or three-year rotation basis, i.e., all upper division required engineering courses are offered at least once every two years along with a general selection of technical electives. Day and evening engineering courses are open to non-degree students with the proper prerequisites who are interested in professional development. Non-engineering required courses, e.g. mathematics, physics, chemistry, et al, are offered regularly in the evening as are humanities/social sciences electives and other technical electives. See the section on the Part-time Studies Program in the front part of this bulletin for information.

STUDY ABROAD PROGRAMS

Engineering students may study abroad with a Marquette affiliated program, a Marquette exchange program, a Marquette summer or intercession program or a non-Marquette program. Students are urged to contact the office of the Associate Dean for Academic Affairs as early as possible for details. See also, this bulletin under Study Abroad Programs. The College of Arts and Sciences also maintains a Study Abroad Resource Center in Marquette Hall, 208. Study abroad information is also available in the reference collection and at the reserve desk in the Memorial Library. For additional information, see www.mu.edu/studyabroad/.

FIVE-YEAR COMBINED BS/MS 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 BS degree on schedule in four years and the MS 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.

Students admitted to the Five-Year Combined BS/MS Program are eligible for graduate student financial aid (teaching and research assistantships and fellowships) beginning with the second term of their senior year. Students interested in information should contact the appropriate department chair.

ADVANCED STANDING – 2+2 AND DUAL DEGREE PROGRAMS

The College of Engineering maintains formal agreements with various colleges for the transfer of credits into selected engineering degree programs. Students who attend Waukesha County Technical College (WCTC) in Electronics Technology or Mechanical Design Technology may transfer to Marquette with junior status as a part of a 2+2 program agreement after satisfactori-

ly completing their degree program at WCTC. The college also maintains dual degree programs with Spring Hill College in Mobile, Ala. and Creighton University in Omaha, Neb. Students who engage the Spring Hill program are awarded a bachelor's degree from Spring Hill and a bachelor's degree in engineering from Marquette. Students who engage the program with Creighton receive an associate degree after two years at Creighton, transfer to Marquette with junior standing and receive a bachelor's degree in engineering after completion of the Marquette program. For more information contact the office of the Associate Dean for New Student Programs.

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.

PROFESSIONAL SOCIETIES

Student chapters have been established by the American Society of Civil Engineers, 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, 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 and the Solar Energy Society.

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; and Alpha Omega Epsilon, professional engineering sorority.

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.

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.

CURRICULA INFORMATION

DEPARTMENT OF BIOMEDICAL ENGINEERING

The Department of Biomedical Engineering offers curricula that leads to a bachelor of science degree in biomedical engineering.

MISSION

The mission of the Department of Biomedical Engineering is to provide its students with knowledge, leadership and communication skills, while fostering ethical and moral character, and compassion for the human condition. This knowledge, character, compassion and skills will allow the students, as biomedical engineers, to respond to the scientific and technical needs of the medical and health care community and society at large.

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, and 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.

THE LES ASPIN BIOMEDICAL INTERSHIPS

The Department of Biomedical Engineering in conjunction with the Les Aspin Center for Government at Marquette University offer 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. The Biomedical Engineering Co-op/Internship Program is supported by funding from the Whitaker Foundation. 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 undergraduate degree programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). 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 quality 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.

EDUCATIONAL OBJECTIVES

- To provide a quality foundation in the fundamental concepts (mathematics, physical science, life science and engineering) and background needed to pursue a successful career in biomedical engineering.
- To offer the student an educational program in areas which provide a broad and interdisciplinary background in appropriate theory, design and practice.
- To prepare graduates who are able to communicate effectively in written, graphical and oral forms.
- To provide opportunities to foster effective student-team interaction.
- To interact with industrial partners to maintain a current educational curriculum.
- To prepare graduates for employment or post-graduate training in biomedical engineering.
- To earn national recognition for excellence in biomedical engineering training and medical research.
- To provide an appreciation for religious, moral, ethical and human values.

BIOCOMPUTING MAJOR*Freshman*

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|---|------------------------|---|------------------------|
| BIEN 001 Introduction to Biomedical Engineering Methods 1 | 2 | BIEN 002 Introduction to Biomedical Engineering Methods 2 | 2 |
| BIOL 001 ^b General Biology 1 | 3 | BIOL 002 General Biology 2 | 3 |
| MATH 080 ^b Calculus 1 | 4 | MATH 081 ^b Calculus 2 | 4 |
| PHYS 003 ^b General Physics with Calculus 1 | 4 | PHYS 004 ^b General Physics with Calculus 2 | 4 |
| ENGL 001 ^b Rhetoric and Composition 1 | 3 | COEN 051 Introduction to Computer Programming | 3 |
| | <hr/> 16 | | <hr/> 16 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|---|------------------------|--|------------------------|
| COEN 030 Introduction to Computer Hardware and Software | 3 | COEN 020 Intro to Software Engineering | 3 |
| MATH 086 Calculus 3 for Biomedical Engineers | 3 | ENGL 002 ^b Rhetoric and Composition 2 | 3 |
| GEEN 003 Engineering Orientation | 0 | BIEN 100 Biomedical Circuits and Electronics | 4 |
| CHEM 001 ^b General Chemistry 1 | 4 | MATH 087 Differential Equations Biomedical Engineers | 3 |
| BIOL 090 Principles of Biological Investigation | 3 | CHEM 002 ^b General Chemistry 2 | 4 |
| BIEN 084 Statistics for Biomedical Engineering | 1 | | |
| Core elective ^c | 3 | | |
| | <hr/> 17 | | <hr/> 17 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|---|------------------------|
| EECE 112 Digital Electronics | 4 | BIEN 155 Signals and Systems for Biomedical Engineering | 4 |
| BIEN 185 Computer Applications in Biomedical Engineering | 3 | COEN 171 Computer Hardware | 3 |
| COEN 120 Data Structures for Engineers | 3 | COEN 183 Operating Systems and Networks | 3 |
| Biocomputing elective ² | 4 | BIEN 112 Embedded Biomedical Instrumentation | 3 |
| Core elective ^c | 3 | THEO 001 ^b Introduction to Theology | 3 |
| | <hr/> 17 | | <hr/> 16 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| BIEN 146 Principles of Design | 3 | BIEN 147 Senior Design Project | 3 |
| BIEN 180 Systems Physiology | 3 | BIEN 187 Biomedical Instrumentation Design | 3 |
| BIEN 193 Biocomputers Design Lab I | 3 | BIEN 194 Biocomputers Design Lab 2 | 3 |
| Biomedical Engineering elective ¹ | 3 | Biomedical Engineering elective ¹ | 3 |
| PHIL 050 ^b Philosophy of Human Nature | 3 | PHIL 104 ^b Theory of Ethics | 3 |
| Core elective ^c | 3 | Theology elective ^c | 3 |
| | <hr/> 18 | | <hr/> 18 |

a For footnotes b, c, d, e 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 100-level 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 024 and BIOL 100 as electives. BIEN 151, BIEN 152, BIEN 153, BIEN 157, BIEN 160, BIEN 168, BIEN 170, BIEN 182, BIEN 183, BIEN 184, BIEN 186, BIEN 195 (QPA>3.0), EECE 121, EECE 122, EECE 141 (2 cr.), EECE 142 (2cr.), EECE 190, CEEN 130, MEEN 104, MEEN 108, MEEN 142, MEEN 154, MEEN 161, COEN 030, COEN 150, COEN 172, COEN 180, COEN 182, BIOL 100, BIOL 170, CHEM 024, MATH 147, PSYC 114.

2. Biocomputing Elective — Either CHEM 023, Organic Chemistry or CEEN 022, Statics and Dynamics.

BIOELECTRONICS MAJOR*Freshman*

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|---|------------------------|---|------------------------|
| BIEN 001 Introduction to Biomedical Engineering Methods 1 | 2 | BIEN 002 Introduction to Biomedical Engineering Methods 2 | 2 |
| BIOL 001 ^b General Biology 1 | 3 | BIOL 002 General Biology 2 | 3 |
| MATH 080 ^b Calculus 1 | 4 | MATH 081 ^b Calculus 2 | 4 |
| PHYS 003 ^b General Physics with Calculus 1 | 4 | PHYS 004 ^b General Physics with Calculus 2 | 4 |
| ENGL 001 ^b Rhetoric and Composition 1 | 3 | ENGL 002 ^b Rhetoric and Composition 2 | 3 |
| | <hr/> 16 | | <hr/> 16 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| EECE 011 Electric Circuits 1 | 3 | EECE 012 Electric Circuits 2 | 3 |
| GEEN 003 Engineering Orientation | 0 | EECE 010 Electronic Devices and Applications | 3 |
| CHEM 001 ^b General Chemistry 1 | 4 | CHEM 002 ^b General Chemistry 2 | 4 |
| MATH 086 Calculus 3 for Biomedical Engineers | 3 | MATH 087 Differential Equations for Biomedical Engineers | 3 |
| EECE 041 Circuits Lab 1 | 1 | BIOL 090 Principles of Biological Investigation | 3 |
| BIEN 084 Statistics for Biomedical Engineering | 1 | EECE 042 Circuits Lab 2 | 1 |
| Core elective ^c | 3 | | |
| Core elective ^c | 3 | | |
| | <hr/> 18 | | <hr/> 17 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| EECE 112 Digital Electronics | 4 | BIEN 185 Computer Applications in Biomedical Engineering | 3 |
| EECE 113 Linear Systems Analysis | 4 | EECE 111 Analog Electronics | 4 |
| CHEM 023 Organic Chemistry 1 | 4 | BIEN 180 Systems Physiology | 3 |
| CEEN 022 Statics and Dynamics | 4 | THEO 001 ^b Introduction to Theology | 3 |
| | | Core elective ^c | 3 |
| | <hr/> 16 | | <hr/> 16 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| BIEN 146 Principles of Design | 3 | BIEN 147 Senior Design Project | 3 |
| BIEN 187 Biomedical Instrumentation Design | 3 | BIEN 186 Physiological Transport Phenomena | 3 |
| BIEN 188 Biomedical Engineering Design Lab 1 | 3 | BIEN 189 Biomedical Engineering Design Lab 2 | 3 |
| EECE 143 Digital Electronics Lab | 2 | Biomedical Engineering elective ¹ | 3 |
| Biomedical Engineering elective ¹ | 3 | Theology elective ^d | 3 |
| PHIL 050 ^b Philosophy of Human Nature | 3 | PHIL 104 ^b Theory of Ethics | 3 |
| | <hr/> 17 | | <hr/> 18 |

a For footnotes b, c, d, e 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 100-level 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 024 and BIOL 100 as electives. BIEN 151, BIEN 152, BIEN 153, BIEN 157, BIEN 160, BIEN 168, BIEN 170, BIEN 182, BIEN 183, BIEN 184, BIEN 195 (QPA>3.0), EECE 121, EECE 122, EECE 141 (2 cr.), EECE 142 (2cr.), EECE 190, CEEN 130, MEEN 104, MEEN 108, MEEN 128, MEEN 141, MEEN 142, MEEN 154, MEEN 160, COEN 030, COEN 150, COEN 172, COEN 182, BIOL 100, BIOL 170, CHEM 024, MATH 147, PSYC 114.

BIOMECHANICS MAJOR*Freshman*

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|---|------------------------|---|------------------------|
| BIEN 001 Introduction to Biomedical Engineering Methods 1 | 2 | BIEN 002 Introduction to Biomedical Engineering Methods 2 | 2 |
| BIOL 001 ^b General Biology 1 | 3 | BIOL 002 General Biology 2 | 3 |
| MATH 080 ^b Calculus 1 | 4 | MATH 081 ^b Calculus 2 | 4 |
| PHYS 003 ^b General Physics with Calculus 1 | 4 | PHYS 004 ^b General Physics with Calculus 2 | 4 |
| ENGL 001 ^b Rhetoric and Composition 1 | 3 | ENGL 002 ^b Rhetoric and Composition 2 | 3 |
| | <hr/> 16 | | <hr/> 16 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|---|------------------------|---|------------------------|
| BIOL 090 Principles of Biological Investigation | 3 | MEEN 060 Materials Science. | 3 |
| CHEM 001 ^b General Chemistry 1 | 4 | CHEM 002 ^b General Chemistry 2 | 4 |
| CEEN 010 Statics | 3 | MEEN 020 Dynamics. | 3 |
| MATH 086 Calculus 3 for Biomedical Engineers | 3 | MATH 087 Differential Equations for Biomedical Engineers. | 3 |
| GEEN 003 Engineering Orientation | 0 | BIEN 084 Statistics for Biomedical Engineering | 1 |
| Core elective ^c | 3 | Core elective ^c | 3 |
| | <hr/> 16 | | <hr/> 17 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|---|------------------------|
| BIEN 100 Biomedical Circuits and Electronics | 4 | BIEN 155 Signals and Systems for Biomedical Engineering | 4 |
| CEEN 130 Mechanics of Materials | 3 | BIEN 185 Computer Applications in Biomedical Engineering. | 3 |
| CHEM 023 Organic Chemistry | 4 | MEEN 104 Principles of Thermofluids. | 3 |
| BIEN 180 Systems Physiology | 3 | MEEN elective ² | 3 |
| Core elective ^c | 3 | THEO 001 ^b Introduction to Theology. | 3 |
| | <hr/> 17 | | <hr/> 16 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|---|------------------------|--|------------------------|
| BIEN 191 Biomechanical Engineering Design Lab 1 | 3 | BIEN 192 Biomechanical Engineering Design Lab 2. | 3 |
| BIEN 187 Biomedical Instrumentation Design | 3 | BIEN 186 Physiological Transport Phenomena. | 3 |
| BIEN 146 Principles of Design. | 3 | BIEN 147 Senior Design Project | 3 |
| Biomedical Engineering elective ¹ | 3 | Biomedical Engineering elective ¹ | 3 |
| MEEN elective ² | 3 | Theology elective ^d | 3 |
| PHIL 050 ^b Philosophy of Human Nature. | 3 | PHIL 104 ^b Theory of Ethics. | 3 |
| | <hr/> 18 | | <hr/> 18 |

a For footnotes b, c, d, e 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 100-level 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 024 and BIOL 100 as electives. BIEN 151, BIEN 152, BIEN 153, BIEN 157, BIEN 160, BIEN 168, BIEN 170, BIEN 182, BIEN 183, BIEN 184, BIEN 195 (QPA>3.0), EECE 121, EECE 122, EECE 141 (2 cr.), EECE 142 (2cr.), EECE 190, MEEN 108, MEEN 142, MEEN 154, MEEN 161, COEN 030, COEN 150, COEN 172, COEN 182, BIOL 100, BIOL 170, CHEM 024, MATH 147, PSYC 114.

2 MEEN Electives — Students may choose two of three Mechanical Engineering courses. MEEN 128, Dynamics of Mechanical Systems; MEEN 141, Computer Aided Design; of MEEN 160, Materials Selection in Mechanical Design. Note: MEEN 128 is a prerequisite for MEEN 141. If not used as a MEEN elective, any of these courses can be used a BIEN elective.

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-four hours consisting of BIEN 100, 155, 180, 185, 187; BIOL 001; CHEM 023; (or equivalent). 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.

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

The Department of Civil and Environmental Engineering offers a curriculum that leads to a bachelor of science degree in civil engineering.

MISSION

The mission of the Department of Civil 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.

EDUCATIONAL OBJECTIVES

- Develop an appreciation for religious, moral, ethical and human values.
- Provide a foundation for the application of the fundamentals of science and mathematics for solving engineering problems.
- Give students an opportunity to experience the civil engineering profession through the Cooperative Education program, summer internships or hands-on experience in laboratory courses.
- Prepare graduates to communicate effectively in written, graphical and oral form.
- Provide 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, 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 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.

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

is arranged to permit students to prepare themselves generally in civil engineering by completing the core courses which provide all the necessary fundamentals and selecting electives to acquire additional depth in one or more of the areas of specialization. All 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 AND PUBLIC WORKS MANAGEMENT

Construction and public works 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 and public works management while still maintaining the essentials of a general civil engineering program.

ENVIRONMENTAL AND WATER RESOURCES

The environmental area is concerned 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, wastewater treatment and disposal, air pollution control, solid and hazardous waste management and design of water resources systems.

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.

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).

URBAN

Many graduate civil engineers will find employment with governmental agencies and engineering design firms which are primarily concerned with metropolitan type problems. Courses within this area are designed to acquaint the student with urban related concepts and problems, most of which are large scale and people oriented.

CIVIL ENGINEERING MAJOR*Freshman*

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|---|------------------------|
| MATH 080 ^b Calculus 1 | 4 | MATH 081 ^b Calculus 2 | 4 |
| CHEM 001 ^b General Chemistry 1 | 4 | CHEM 002 ^b General Chemistry 2 | 4 |
| ENGL 001 ^b Rhetoric and Composition 1 | 3 | ENGL 002 ^b Rhetoric and Composition 2 | 3 |
| Core elective ^c | 3 | Core elective ^c | 3 |
| GEEN 022 Introduction to Graphics for Engineers | 2 | GEEN 010 Introduction to Engineering Problem Solving | 2 |
| GEEN 011 Introduction to Engineering | 1 | GEEN 023 Introduction to Engineering Computing | 2 |
| | <hr/> 17 | | <hr/> 18 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| MATH 082 Calculus 3 | 4 | MATH 083 Differential Equations | 4 |
| PHYS 003 ^b General Physics I with Calculus | 4 | PHYS 004 ^b General Physics 2 with Calculus | 4 |
| GEEN 003 Engineering Orientation | 0 | ENME 020 Dynamics | 3 |
| CEEN 032 Elem. Surveying | 3 | INEN120 Engineering Economy | 2 |
| ENME 010 Statics | 3 | Core elective ^c /Free elective ^d | 3 |
| Core elective ^c | 3 | | |
| | <hr/> 17 | | <hr/> 16 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| ENME 130 Mechanics of Materials | 3 | CEEN 110 Structural Analysis | 3 |
| CEEN 150 Environmental Engineering | 3 | CEEN 162 Geotechnical Engr. | 3 |
| CEEN 043 Behav. and Properties of Engineering Materials | 3 | CEEN 126 Hydraulic Engineering | 3 |
| ENME 151 Mechanics of Fluids | 3 | CEEN 170 Intro. to Transportation Engineering | 3 |
| Cross-disciplinary Engineering elective ¹ | 3 | THEO 001 ^b Introduction to Theology | 3 |
| PHIL 050 ^b Philosophy of Human Nature | 3 | | |
| | <hr/> 18 | | <hr/> 15 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|---|------------------------|--|------------------------|
| CEEN 113 Steel Design 1 | 3 | CEEN 189 Civil Engr. Design | 4 |
| CEEN 144 Reinforced Concrete Design | 3 | CEEN Technical elective | 3 |
| CEEN 180 Introduction to Construction Management | 3 | CEEN Technical elective (Design) | 3 |
| CEEN 139 Engineering Fundamentals Review | 1 | PHIL 104 ^b Theory of Ethics | 3 |
| CEEN Technical elective | 3 | Theology elective ^c | 3 |
| CEEN Technical elective (Design) | 3 | | |
| | <hr/> 16 | | <hr/> 16 |

a For footnotes b, c, d, e refer to the College of Engineering section of this bulletin for details related to these footnotes.

1 Either EECE 109 or MEEN 104

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 111 | CEEN 148 (D) | CEEN 174 (D) |
| CEEN 114 (D) | CEEN 149 (D) | CEEN 175 |
| CEEN 123 (D) | CEEN 154 | CEEN 176 (D) |
| CEEN 124 | CEEN 155 | CEEN 177 |
| CEEN 127 (D) | CEEN 156 (D) | CEEN 181 |
| CEEN 128 | CEEN 157 | CEEN 182 |
| CEEN 129 | CEEN 159 | CEEN 183 |
| CEEN 145 | CEEN 163 (D) | CEEN 184 |
| CEEN 146 (D) | CEEN 172 (D) | CEEN 185 (D) |
| CEEN 147 (D) | CEEN 173 (D) | CEEN 186 |

(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.

TABLE OF TECHNICAL ELECTIVE COURSES

| COURSES | | Environmental Option | Structural Option | Transportation Option | Construction & Public Works Management Option |
|---------|--|-------------------------|----------------------|--------------------------|---|
| CEEN | 111 Structural Analysis 2 | | HR | | R |
| | 114 Steel Design 2 | | HR | | |
| | 123 Urban Hydrology and Storm Water Management | HR | | R | R |
| | 124 Air Pollution Engineering | R | | R | |
| | 127 Water Resources Engineering | R | | R | |
| | 128 Groundwater Engineering | R | | | |
| | 129 Geographical Information Systems | R | | R | |
| | 145 Advanced Mechanics of Materials | | R | | |
| | 146 Advanced Concrete and Masonry Design | | HR | | R |
| | 147 Prestressed Concrete Design | | HR | | R |
| | 148 Timber Structures | | HR | | |
| | 149 Bridge Design | | HR | R | |
| | 154 Environmental Chemistry | HR | | | |
| | 155 Industrial Wastewater Management | R | | | |
| | 156 Treatment Plant Design and Operation | HR | | | |
| | 157 Hazardous and Industrial Waste Management | R | | | |
| | 159 Municipal Solid Waste Management | R | | | |
| | 163 Foundation Engineering | | R | | HR |
| | 172 Highway Planning and Design | | | HR | |
| | 173 Airport Planning and Design | | | HR | |
| | 174 Pavement Design | | | R | |
| | 175 Pavement Management | | | HR | R |
| | 176 Traffic Characteristics and Design | | | HR | |
| | 177 Advanced Transportation Materials | | | HR | R |
| | 181 Construction Cost Estimating | R | R | R | HR |
| | 182 Computer Applications in Construction | | | | HR |
| | 183 Probability Applications in Engineering Planning and Design | | R | | HR |
| | 184 Construction Seminars | | | | HR |
| | 185 Urban Planning for Civil Engineers | | | HR | R |
| | 186 Law for Engineers | R | | | HR |

R Recommended; HR Highly Recommended

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.

Freshman and Sophomore

The freshman and sophomore years are the same as those described for the civil engineering major.

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|---|------------------------|---|------------------------|
| ENME 130 Mechanics of Materials | 3 | CEEN 110 Structural Analysis | 3 |
| ENME 151 Mechanics of Fluids | 3 | CEEN 126 Hydraulic Engineering | 3 |
| CEEN 043 Behavior & Properties of Engineering Materials. | 3 | CEEN 162 Geotechnical Engineering. | 3 |
| CEEN 150 Environmental Engineering. | 3 | CEEN 170 Introduction to Transportation Engineering. | 3 |
| BIOL 001 ^b General Biology 1 | 3 | PHIL 050 ^b Philosophy of Human Nature | 3 |
| MEEN104 Principles of Thermofluids | 3 | | |
| | <hr/> 18 | | <hr/> 15 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|---|------------------------|
| CEEN 139 Engr. Fundamentals Review | 1 | CEEN 189 Civil Engr. Design. | 4 |
| CEEN 154 Environmental Chemistry | 3 | Environmental technical elective | 3 |
| CEEN180 Intro. to Construction Mgmt. | 3 | Environmental technical elective (Design) | 3 |
| CEEN 187 Environmental Seminar ¹ | 0 | PHIL 104 ^b Theory of Ethics. | 3 |
| Structural Design elective ² | 3 | Theology elective ^c | 3 |
| Environmental technical elective (Design) | 3 | | |
| THEO 001 ^b Introduction to Theology | 3 | | |
| | <hr/> 16 | | <hr/> 16 |

a For footnotes b, c, d, e refer to the College of Engineering section of this bulletin for details related to these footnotes.

1 Participation in CEEN 187, Environmental Seminar, is required during either the first or second term of the senior year.

2 Either CEEN 113 or CEEN 144

ENVIRONMENTAL ELECTIVES

Nine credits are required from the following list. Six credits must be selected from those designated as design (D).

| | | |
|--------------|----------|--------------|
| CEEN 123 (D) | CEEN 128 | CEEN 156 (D) |
| CEEN 124 | CEEN 129 | CEEN 157 |
| CEEN 127 (D) | CEEN 155 | CEEN 159 |
| | | CEEN 185 (D) |

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 ENME 022, (or ENME 010 and 020), 130, 151 and at least 12 additional hours, from the following CEEN courses: CEEN 032, 110, 150, 162, 170, or 180, with additional needed credits from any upper-division CEEN course. 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 ENME 022, (or ENME 010 and 020), 151, BIOL 001 or CHEM 023, CEEN 150 and at least nine additional hours from the following courses: CEEN 123, 126, 127, 128, 154, 155, 156, 157, 159. 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 in order to plan their schedules to meet their particular objectives with a minimum amount of overload credits.

FIVE-YEAR B.S./M.S. PROGRAM

The department offers a five-year combined B.S./M.S. program 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 Maquette University (with a Q.P.A. of 3.5 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 (essay or 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

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.

ELECTRICAL ENGINEERING

Two curricula offered in the Department of Electrical and Computer Engineering lead to the bachelor of science degree in electrical engineering.

EDUCATIONAL OBJECTIVES

- **Value-based Education.** Electrical Engineering graduates will have an informed concern for religious, moral, ethical and human values, especially as these values impact their professional decisions.
- **Fundamental Skills.** Electrical Engineering students will develop the ability to formulate and analyze significant electrical engineering problems by applying college-level mathematics, basic science, and engineering science. When solving these engineering problems, students will apply up-to-date tools and techniques with particular emphasis on the use of computers.
- **Practical Training.** Electrical Engineering students will experience the practical side of their profession through a number of avenues including laboratory courses, summer internships, and the co-op program.
- **Communications Skills.** Electrical Engineering students will develop the oral and written communications skills necessary to function effectively in today's business world through formal courses and required oral and written presentations in their engineering classes.
- **Design Skills.** Electrical Engineering students will learn the design process including the personal skills of group interaction through a variety of experiences culminating in the comprehensive senior-year design program.
- **Team Skills.** Electrical Engineering students will develop the ability to work effectively in teams through a variety of experiences in course and laboratory assignments as well as in the senior-year design program.
- **Lifelong Learning.** Electrical Engineering graduates will be fully cognizant of the need for, and will be prepared to participate in, lifelong learning.

Electrical and Electronic Engineering Major

The *electrical and electronic engineering major* provides students with a comprehensive electrical engineering background including course specialties in three broad categories: *materials and devices*, *devices and circuits*, and *circuits and systems*. *Materials and devices* involves the development of methods for characterizing materials and devices constructed from these materials, the development of new manufacturing and processing technologies, and the design and fabrication of electronic components. *Devices and circuits* work ranges from the design of electronic components to the development of complete circuits employing these devices. *Circuits and systems* involves the application of devices and circuits to full-scale consumer and industrial products which employ various solid state devices and transducers, electromechanical and otherwise.

Electrical and Electronic Engineering Major*Freshman*

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| MATH 080 ^b Calculus 1 | 4 | MATH 081 ^b Calculus 2 | 4 |
| PHYS 003 ^b General Physics with Calculus 1 | 4 | PHYS 004 ^b General Physics with Calculus 2 | 4 |
| ENGL 001 ^b Rhetoric and Composition 1 | 3 | ENGL 002 ^b Rhetoric and Composition 2 | 3 |
| GEEN 011 Introduction to Engineering | 1 | GEEN 010 Introduction to Engineering Problem Solving | 2 |
| EECE 001 Freshman Seminar | 0 | COEN 051 Introduction to Computer Programming | 3 |
| THEO 001 ^b Introduction to Theology | 3 | GEEN 052 Introduction to MATLAB | 1 |
| | <hr/> 15 | | <hr/> 17 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| MATH 082 Calculus 3 | 4 | MATH 083 Differential Equations | 4 |
| GEEN 003 Engineering Orientation | 0 | ENME 022 Statics and Dynamics | 4 |
| CHEM 001 ^b General Chemistry 1 | 4 | EECE 010 ¹ Electronic Devices and Applications | 3 |
| EECE 011 ¹ Electric Circuits 1 | 3 | EECE 012 ¹ Electric Circuits 2 | 3 |
| EECE 041 ¹ Circuits Laboratory 1 | 1 | EECE 042 Circuits Laboratory 2 | 1 |
| COEN 030 Introduction to Computer Hardware and Software | 3 | MATH 164 Statistical Methods | 3 |
| PHIL 050 ^b Philosophy of Human Nature | 3 | | |
| | <hr/> 18 | | <hr/> 18 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|---|------------------------|
| EECE 112 ¹ Digital Electronics | 4 | EECE 111 ¹ Analog Electronics | 4 |
| EECE 113 Linear Systems Analysis | 4 | EECE 122 Electromagnetic Fields 2 | 3 |
| EECE 121 ¹ Electromagnetic Fields 1 | 4 | EECE 123 Electromechanical Energy Conversion | 3 |
| EECE 141 ¹ Electrical Instrumentation Laboratory | 2 | EECE 143 Digital Electronics Laboratory | 2 |
| PHIL 104 ^b Theory of Ethics | 3 | Core elective ^c | 3 |
| | <hr/> 17 | | <hr/> 15 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| EECE 114 Physical Principles of Solid State Devices | 3 | EECE 147 Senior Design Project | 3 |
| EECE 142 Analog Electronics Laboratory | 2 | EECE/Technical elective ² | 3 |
| EECE 146 Principles of Design | 3 | Science/Math elective ⁴ | 3 |
| Design elective ³ | 3 | Core elective ^c | 3 |
| Theology elective ^c | 3 | Core elective ^c /Free elective ^d | 3 |
| Core elective ^c | 3 | | |
| | <hr/> 17 | | <hr/> 15 |

a For footnotes b, c, d, e refer to the College of Engineering section of this bulletin for details related to these footnotes.

1.A "C" or better grade is required in these courses to meet the prerequisites for subsequent computer and/or electrical engineering required courses.

2. This elective will normally be an upper division elective (100-199 level courses) in EECE, COEN, COSC, MATH, PHYS and/or CHEM. Other courses may be acceptable with prior approval of the department.

3. This elective must be chosen from EECE 150, EECE 153, EECE 157, EECE 162, EECE 164, EECE 165, EECE 173, EECE 174, EECE 175, EECE 176, EECE 181, EECE 182, EECE 185, EECE 186, EECE 187, COEN 151, COEN 152, COEN 170, COEN 171, COEN 172, COEN 181, and (EECE 145, 151, 168, 183, 195 and COEN 168, 195 with department approval)

4. 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.

Electrical and Computer Engineering Major

The electrical and computer engineering major provides students with a comprehensive electrical engineering background that contains a greater exposure to and more in-depth study of computer principles and applications. The *electrical and computer engineering major* offers a carefully integrated course of instruction in electrical engineering, computer engineering and mathematics, to provide a student with a broader computer background than does the *electrical and electronic engineering major*. The *electrical and computer engineering major* includes a course in data structures and an integrated two-term sequence in computer software and hardware. The emphasis in these courses is on small computers, particularly microcomputer concepts and applications. Students completing the electrical and computer engineering major may satisfy the requirements for a minor in computer science (COSC) from the College of Arts and Sciences by an appropriate selection of their program elective, technical elective, and science/math elective.

Electrical and Computer Engineering Major

Freshman

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| MATH 080 ^b Calculus 1 | 4 | MATH 081 ^b Calculus 2 | 4 |
| PHYS 003 ^b General Physics with Calculus 1 | 4 | PHYS 004 ^b General Physics with Calculus 2 | 4 |
| ENGL 001 ^b Rhetoric and Composition 1 | 3 | ENGL 002 ^b Rhetoric and Composition 2 | 3 |
| GEEN 011 Introduction to Engineering | 1 | GEEN 010 Introduction to Engineering Problem Solving | 2 |
| EECE 001 Freshman Seminar | 0 | COEN 051 Introduction to Computer Programming | 3 |
| THEO 001 ^b Introduction to Theology | 3 | GEEN 052 Introduction to MATLAB | 1 |
| | 15 | | 17 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|---|------------------------|--|------------------------|
| MATH 082 Calculus 3 | 4 | MATH 083 Differential Equations | 4 |
| GEEN 003 Engineering Orientation | 0 | ENME 022 ³ Statics and Dynamics | 4 |
| CHEM 001 ^b General Chemistry 1 | 4 | EECE 010 ¹ Electronic Devices and Applications | 3 |
| EECE 011 ¹ Electric Circuits 1 | 3 | EECE 012 ¹ Electric Circuits 2 | 3 |
| EECE 041 ¹ Circuits Laboratory 1 | 1 | EECE 042 Circuits Laboratory 2 | 1 |
| COEN 030 ¹ Introduction to Computer Hardware and Software | 3 | MATH 164 Statistical Methods | 3 |
| PHIL 050 ^b Philosophy of Human Nature | 3 | | |
| | 18 | | 18 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| EECE 112 ¹ Digital Electronics | 4 | EECE 111 ¹ Analog Electronics | 4 |
| EECE 113 Linear Systems Analysis | 4 | EECE 143 Digital Electronics Laboratory | 2 |
| EECE 121 Electromagnetic Fields 1 | 4 | COEN 120 Data Structures for Engineers | 3 |
| EECE 141 ¹ Electrical Instrumentation Laboratory | 2 | COEN 171 Computer Hardware | 3 |
| PHIL 104 ^b Theology of Ethics | 3 | Core elective ^c | 3 |
| | 17 | | 15 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| EECE 142 Analog Electronics Lab | 2 | EECE 147 Senior Design Project | 3 |
| EECE 146 Principles of Design | 3 | Program elective ⁴ | 3 |
| Design elective ³ | 3 | EECE/Technical elective ² | 3 |
| Science/Math elective ⁶ | 3 | Core elective ^c | 3 |
| Theology elective ^c | 3 | Core elective ^c /Free elective ^d | 3 |
| Core elective ^c | 3 | | |
| | 17 | | 15 |

^a For footnotes b, c, d, e refer to the College of Engineering section of this bulletin for details related to these footnotes.

1.A "C" or better grade is required in these courses to meet the prerequisites for subsequent computer and/or electrical engineering required courses.

2. These electives will normally be upper division electives (100-199 level courses) in EECE, COEN, COSC, MATH, PHYS and/or CHEM. Other courses may be acceptable with prior approval of the department.
3. This elective must be chosen from the following courses with a computer design emphasis: EECE 150, EECE 153, EECE 157, EECE 162, EECE 164, EECE 165, EECE 175, EECE 176, COEN 151, COEN 152, COEN 170, COEN 172, COEN 181, and (EECE 145, 151, 168, 195 and COEN 168, 195 with departmental approval)
4. This elective must be chosen from the following list: EECE 150, EECE 153, EECE 157, EECE162, EECE164, EECE165, EECE175, and EECE176, COEN 151, COEN 152, COEN 170, COEN 172, COEN 181, (EECE 145, 151, 168, 195 and COEN168, 195 with departmental approval), COSC 149 (COEN 183), COSC 152, COSC 153 (COEN 150), COSC 157 (COEN 122), COSC 158, COSC 159 (COEN 130), COSC 170 (COEN 123)
5. Students may also choose CHEM 002 (4 credits) in place of CEEN 022.
6. 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. If CHEM 002 is selected instead of CEEN 022, this elective becomes an EECE/Tech elective.

AREAS OF CONCENTRATION WITHIN ELECTRICAL ENGINEERING

ELECTRICAL AND ELECTRONIC MAJOR: various areas of concentration are available with the appropriate choice of the design elective and the EECE/technical elective. While there is no requirement to concentrate in one area, it is essential that the student select an appropriate and well-planned elective program. The various areas of concentration are described below.

COMPUTERS

Computer courses provide a general background in computer software, hardware, systems, and applications. An understanding of both practical and theoretical concepts is encouraged in the courses below which are available for pursuing software and hardware areas of concentration.

- A. Recommended courses in the computer software area of concentration include: COEN 120, COEN 122, COEN 150, COEN 151†, COSC 190†.
- B. Recommended courses in the computer hardware area of concentration include: COEN 157†, COEN 164†, COEN 171†, COEN 173†.

CONTROL SYSTEMS

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. Recommended courses in the control systems area of concentration include: EECE 150†, EECE 151, EECE 152, EECE 153†, EECE 157†, EECE 166†.

ELECTRONICS

The electronics area offers courses in microelectronics, high frequency and optical electronics, solid state materials and devices, and electronic circuit analysis and design.

A. Solid State Electronics and Materials

Solid state electronics courses include solid state physics and the construction, measurement and utilization of solid state electronic devices such as p-n junctions, MOSFETs, Gunn diodes, silicon controlled rectifiers and the diverse area of integrated circuits. Solid state materials courses study the electrical, physical and mechanical properties of materials as they relate to the present and future requirements of the electrical manufacturing industry.

Recommended courses in the solid state electronics and materials area of concentration include: EECE 160, EECE 161, EECE 162†, EECE 164†, EECE 166†

B. Applied Electromagnetics and Waves

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.

Recommended courses in the applied electromagnetics and waves area of concentration include: EECE 152, EECE 166†, EECE 173†, EECE 174†, EECE 175†, EECE 176†.

C. Electronic Circuit Analysis and Design

Electronic circuit analysis and design involve utilization of feedback and switching theory along with linear and digital, discrete and integrated circuits to construct modern electronic circuits.

Recommended courses in the electronic circuit analysis and design area of concentration include: EECE 165†, EECE 181†, EECE 145, COEN 171†.

POWER

Power engineering emphasizes the control and conversion of electrical energy. Motors, generators, and power distribution and control systems are examined. Modern computer-aided analysis is brought to bear on the design and analysis of power devices and power systems.

Recommended courses in the power area of concentration include: EECE 161, EECE 162†, EECE 165†, EECE 181†, EECE 182†, EECE 183, EECE 185†, EECE 186†, EECE 187†.

†Design Elective

ELECTRICAL AND COMPUTER MAJOR: software and hardware areas of concentration are available through the appropriate choice of the design elective, the program elective, and the EECE/technical elective.

COMPUTER SOFTWARE

Recommended courses in the computer software area of concentration include: COEN 122, COEN 150, COEN 151†, COEN 172†, COEN 183†, COEN 190†, COEN 191†, COEN 192†.

COMPUTER HARDWARE

Recommended courses in the computer hardware area of concentration include: EECE 122, COEN 130†, COEN 157†, COEN 164†, COEN 173†.

†Design Elective

CHOOSING ELECTIVES

In choosing electives, the faculty adviser and student confer to determine what the student's individual interests and objectives are and then what upper division elective courses best meet his or her needs. By careful choice of an elective program the student can obtain in-depth knowledge in one area of concentration in addition to the broad fundamental background developed in the required courses. Or by equally careful choice of an elective program, the student may continue development of a broad fundamental background. It is the responsibility of the student and his or her faculty adviser to select an appropriate, well-planned elective program. It may be possible for students completing the requirements for the bachelor's degree in electrical engineering to also earn a minor in mathematics or computer science by carefully choosing their elective program.

COMPUTER SCIENCE MINOR

Students in engineering may obtain a minor in computer science by completing the following course requirements with a grade of C or better in each: COEN 051, COEN 030, COSC 149, 152, and 154, plus one additional course from the following: COSC 153, 157, 158, 159, 170. Overload hours can be minimized or eliminated in consultation with an academic adviser.

BIOMEDICAL ENGINEERING MINOR

Students in either the electrical and electronic major or the electrical and computer major may obtain a minor in biomedical engineering. Students interested in the biomedical engineering minor should consult their advisers as early as possible to minimize overload hours.

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.

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 010, 011, 012, 041, 042, 111, 112, 113, 141, and either 121 or COEN 030, or both 142 and 143. 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

In addition to the two electrical engineering majors 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.

EDUCATIONAL OBJECTIVES

Value-Based Education. Computer Engineering graduates will have an informed concern for religious, moral, ethical and human values especially as these values impact their professional decisions.

Fundamental Skills. Computer Engineering students will develop the ability to formulate and analyze significant computer engineering problems involving both hardware and software considerations, by applying college level mathematics, basic science, and programming skills as appropriate. When solving these computer engineering problems, students will apply up-to-date tools and techniques.

Practical Training. Computer Engineering students will experience the practical side of their profession through a number of avenues including laboratory courses, summer internships, and the Coop program.

Communications Skills. Computer Engineering students will develop the oral and written communications skills necessary to function effectively in today's business world through formal courses and required oral and written presentations in their engineering classes.

Design Skills. Computer Engineering students will learn the design process including the personal skills of group interaction through a variety of experiences culminating in the comprehensive senior year design program.

Team Skills. Computer Engineering students will develop the ability to work effectively in teams through a variety of experiences in course and laboratory assignments as well as in the senior year design program.

Life-Long Learning. Computer Engineering graduates will be fully cognizant of the need for, and will be prepared to participate in, lifelong learning

Computer Engineering*Freshman*

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| MATH 080 ^b Calculus 1 | 4 | MATH 081 ^b Calculus 2 | 4 |
| PHYS 003 ^b General Physics with Calculus 1 | 4 | PHYS 004 ^b General Physics with Calculus 2 | 4 |
| ENGL 001 ^b Rhetoric and Composition 1 | 3 | ENGL 002 ^b Rhetoric and Composition 2 | 3 |
| GEEN 011 Introduction to Engineering | 1 | GEEN 010 Introduction to Engineering Problem Solving | 2 |
| COEN 001 Freshman Seminar | 0 | COEN 051 Introduction to Computer Programming | 3 |
| THEO 001 ^b Introduction to Theology | 3 | | |
| | <hr/> 15 | | <hr/> 16 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|---|------------------------|---|------------------------|
| MATH 082 Calculus 3 | 4 | MATH 083 Differential Equations | 4 |
| GEEN 003 Engineering Orientation | 0 | COEN 020 Intro to Software Engineering | 3 |
| COSC 154 Data Structures for Engineers | 3 | EECE 010 Electronic Devices and Applications | 3 |
| EECE 011 ¹ Electric Circuits 1 | 3 | EECE 012 Electric Circuits 2 | 3 |
| EECE 041 ¹ Circuits Laboratory 1 | 1 | EECE 042 Circuits Laboratory 2 | 1 |
| COEN 030 ¹ Introduction to Computer Hardware and Software | 3 | Core elective ^c | 3 |
| PHIL 050 ^b Philosophy of Human Nature | 3 | | |
| | <hr/> 17 | | <hr/> 17 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|---|------------------------|
| EECE 112 ¹ Digital Electronics | 4 | MATH 145 Discrete Math for Engineers | 3 |
| MATH 164 Statistical Methods | 3 | COEN 171 Computer Hardware | 3 |
| CHEM 001 ¹ General Chemistry 1 | 3 | COEN 183 Operating Systems and Networks | 3 |
| PHIL 104 ^b Theory of Ethics | 4 | EECE 143 Digital Electronics Laboratory | 2 |
| Core elective ^c /Free elective ^d | 3 | COEN/Technical elective ² | 3 |
| | <hr/> 16 | Core elective ^c | 3 |
| | | | <hr/> 17 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|---|------------------------|--|------------------------|
| COEN 140 Computer Engineering Laboratory | 2 | COEN 147 Senior Design Project | 3 |
| COEN 146 Principles of Design | 3 | COEN/Technical elective ² | 3 |
| COEN/Technical elective ² | 3 | COEN/Technical elective ² | 3 |
| COEN/Technical elective ² | 3 | COEN/Technical elective ² | 3 |
| Theology elective ^e | 3 | Core elective ^c | 3 |
| | <hr/> 17 | | <hr/> 15 |

a For footnotes b, c, d, e refer to the College of Engineering section of this bulletin for details related to these footnotes.

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 seven electives must be COEN design electives. The remaining two electives can be in any technical area. 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 seven electives designated as COEN/TECH electives. At least five of these electives must be courses with a COEN number. The remaining two electives can be in any technical area. The student, in consultation with his or her advisor, 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 Engineering area, a second COEN elective must be in the Software Engineering 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 Engineering, Software Engineering, Intelligent Systems, and Applications. These areas of concentration and the courses in each area are described below.

Hardware Engineering

Hardware Engineering 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 Engineering area:

- COEN 157 Digital Signal Processing
- COEN 164 Integrated Microelectronic Circuits
- COEN 168 Topics in Computer Hardware
- COEN 173 Computer Architecture

Software Engineering

Software Engineering emphasizes the design of software systems and includes concerns such as the user interface, expandability and maintainability, efficiency in time and computing resources, software testing, security, etc. The following COEN elective courses are available in the Software Engineering area:

- COEN 167 Topics in Computer Software
- COEN 181 Object-Oriented Software Engineering
- COEN 190 Modern Programming Practices
- COEN 191 Software Testing
- COEN 192 Computer Security

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 EECE 113 as one of their non-COEN electives. The following COEN elective courses are available in the Intelligent Systems area:

- COEN 130 Introduction to Intelligent Systems
- COEN 131 Introduction to Neural Networks and Fuzzy Systems
- COEN 133 Evolutionary Computing
- COEN 157 Digital Signal Processing
- COEN 182 Introduction to Algorithms
- COEN 192 Computer Security

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 150 Database Applications
- COEN 151 Introduction to Computer Graphics
- COEN 167 Topics in Computer Software
- COEN 190 Modern Programming Practices
- COEN 191 Software Testing
- COEN 192 Computer Security

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 EECE 113 as one of their two non-COEN electives in order to meet the entrance requirements.

COMPUTER SCIENCE MINOR

Students in engineering may obtain a minor in computer science by completing the following course requirements with a grade of C or better in each: GEEN 051, COEN 030, COSC 149,

152, and 154, plus three additional hours from the following list of courses: COSC 153, 157, 158, 159, 170.

BIOMEDICAL ENGINEERING MINOR

Students in computer engineering may obtain a minor in biomedical engineering. Students interested in the biomedical engineering minor should consult their advisers as early as possible to minimize overload credits.

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.

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 010, 011, 012, 041, 042, 112, COEN 020, 030, 140, 171, and 183. 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.

DEPARTMENT OF MECHANICAL AND INDUSTRIAL ENGINEERING

The Department of Mechanical and Industrial Engineering offers curricula that lead to a bachelor of science in mechanical engineering.

MISSION

In embracing the missions of the university and the College of Engineering, it is the mission of the Department of Mechanical and Industrial Engineering to offer high quality, up-to-date, nationally-recognized engineering programs which prepare 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.

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 manufacture, 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 coursework, 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.

EDUCATIONAL OBJECTIVES

- Develop the creative and critical thinking skills essential in identifying, structuring, and solving complex problems.
- Foster an appreciation for religious, moral and ethical values.
- Firmly ground students in the fundamentals of mathematics, the basic sciences, and the engineering sciences necessary to pursue a successful career in mechanical engineering.
- Develop graduates who can communicate effectively in written, graphical and oral forms.
- Provide open-ended challenges for the design of mechanical and thermal systems.
- Instill the necessary personal skills and attitudes in students for them to work effectively in teams.
- Give students an opportunity to experience the practical side of their profession through hands-on experience in laboratory courses, the Cooperative Education Program, and summer internships.
- Instill an attitude that learning is a lifelong process.

MECHANICAL ENGINEERING MAJOR*Freshman*

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| CHEM 001 ^b General Chemistry 1 | 4 | CHEM 002 ^b General Chemistry 2 | 4 |
| ENGL 001 ^b Rhetoric and Composition 1 | 3 | ENGL 002 ^b Rhetoric and Composition 2 | 3 |
| GEEN 011 Introduction to Engineering | 1 | GEEN 010 Introduction to Engineering Problem Solving. | 2 |
| GEEN 022 Introduction to Graphics for Engineers | 2 | GEEN 023 Introduction to Engineering Computing. | 2 |
| MATH 080 ^b Calculus 1 | 4 | MATH 081 ^b Calculus 2 | 4 |
| Core elective ^c | 3 | Core elective ^c | 3 |
| | <hr/> 17 | | <hr/> 18 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| MEEN 010 Statics. | 3 | MEEN 020 Dynamics | 3 |
| GEEN 003 Sophomore Orientation | 0 | MEEN 130 Mechanics of Materials. | 3 |
| MEEN 060 Materials Science. | 3 | INEN 140 Engineering Statistics. | 3 |
| MATH 082 Calculus 3 | 4 | MATH 083 Differential Equations. | 4 |
| PHYS 003 ^b General Physics with Calculus 1 | 4 | PHYS 004 ^b General Physics with Calculus 2 | 4 |
| Core elective ^c | 3 | | |
| | <hr/> 17 | | <hr/> 17 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|---|------------------------|
| MEEN 107 Fluid Mechanics | 3 | MEEN 108 Fundamentals of Heat Transfer | 3 |
| MEEN 104 Thermodynamics. | 3 | MEEN 120 Mechanical Measurements and Instrumentation | 3 |
| MEEN 128 Dynamics of Mechanical Systems. | 3 | MEEN 142 Design of Machine Elements | 4 |
| MEEN 160 Materials Selection in Mechanical Design | 3 | MEEN 143 Manufacturing Engineering 1 | 3 |
| EECE 109 Electrical Circuits and Machinery. | 3 | PHIL 104 ^b Theory of Ethics. | 3 |
| PHIL 050 ^b Philosophy of Human Nature. | 3 | | |
| | <hr/> 18 | | <hr/> 16 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| MEEN 114 Thermodynamics 2 | 2 | MEEN 147 Senior Design Project | 3 |
| MEEN 141 Computer Aided Engineering | 3 | MEEN elective. | 3 |
| MEEN 146 Principles of Design. | 3 | MEEN elective. | 3 |
| MEEN 190 ¹ Engineering Fundamentals | 1 | Theology elective ^e | 3 |
| MEEN elective | 3 | Core elective ^c /Free elective ^d | 3 |
| THEO 001 ^b Introduction to Theology | 3 | | |
| | <hr/> 15 | | <hr/> 15 |

^a For footnotes b, c, d, e refer to the College of Engineering section of this bulletin for details related to these footnotes.

¹ As part of the requirement for this course, students must take the State of Wisconsin Fundamentals of Engineering exam or that of another state.

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.

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.

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.

MECHANICAL ENGINEERING MINOR

The Department of Mechanical and Industrial 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 022, MEEN 130, MEEN 060, MEEN 104, MEEN 106 or MEEN 108, MEEN 120, MEEN 128, MEEN 142, and two (2) MEEN electives. 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. Students with qualifying quality point averages enroll in the program during their junior year. They will begin their thesis research the summer between their junior and senior years. Their research laboratory experience will continue the summer between their senior and fifth years and throughout their fifth year, culminating in the preparation of a written thesis and defense.

TABLE OF ELECTIVE COURSES

| | | Areas of Study | | | |
|----------|---|----------------|---------------|-----------------------------------|--------------------|
| COURSES | | Energy Systems | Manufacturing | Materials Science and Engineering | Mechanical Systems |
| MEEN 116 | Energy Conversion Systems | ✓ | | | ✓ |
| MEEN 117 | Heating and Air-conditioning Systems | ✓ | | | |
| MEEN 118 | Power Plants | ✓ | | | |
| MEEN 119 | Topics in Energy Conversion | ✓ | | | |
| MEEN 134 | Intermediate Fluid Dynamics | ✓ | | | |
| MEEN 145 | Reliability Engineering | ✓ | ✓ | | ✓ |
| MEEN 148 | Design of Engineering Experiments | ✓ | ✓ | | ✓ |
| MEEN 150 | Applied Stress Analysis I | | | | ✓ |
| MEEN 151 | Advanced Design of Machine Elements | | | | ✓ |
| MEEN 153 | Finite Element Method | ✓ | | | ✓ |
| MEEN 154 | Introduction to Polymers and Polymer Composites in Design | | ✓ | ✓ | ✓ |
| MEEN 155 | Fatigue and Fracture in Mechanical Design | | | ✓ | ✓ |
| MEEN 156 | Optimal Design of Engineering Systems | ✓ | ✓ | | ✓ |
| MEEN 157 | Perturbation Methods in Engineering | ✓ | | | ✓ |
| MEEN 158 | Mechatronics | | ✓ | | ✓ |
| MEEN 159 | Topics in Mechanical Systems Analysis and Design | | ✓ | | ✓ |
| MEEN 161 | Failure Analysis | | | ✓ | ✓ |
| MEEN 163 | Powder Metallurgy | | ✓ | ✓ | |
| MEEN 165 | Surface Engineering | | | ✓ | |
| MEEN 167 | Mechanical Behavior of Materials | | | ✓ | ✓ |
| MEEN 168 | Processing and Forming of Materials | | ✓ | ✓ | ✓ |
| MEEN 170 | Introduction to Biomaterials Science and Engineering | | | ✓ | |
| MEEN 171 | Topics in Materials Engineering | | | ✓ | |
| MEEN 180 | Metal Forming 1 | | ✓ | ✓ | ✓ |
| INEN 120 | Engineering Economy | ✓ | ✓ | ✓ | ✓ |
| INEN 130 | Optimization of Industrial Systems | | ✓ | | ✓ |
| INEN 131 | Industrial Simulation | | ✓ | | ✓ |
| INEN 140 | Engineering Statistics | ✓ | ✓ | ✓ | ✓ |
| INEN 151 | Work Measurement and Workplace Design | | ✓ | | |
| INEN 164 | Ergonomics | | ✓ | | |
| INEN 185 | Welding Engineering | | ✓ | ✓ | ✓ |

NON-ENGINEERING MINORS

Students wishing to achieve a minor in business administration, mathematics or computer science 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 | | Hours |
|---------------------|--|-------|
| ECON 043 | Principles of Microeconomics | 3 |
| ECON 044 | Principles of Macroeconomics | 3 |
| ACCO 030 | Financial Accounting | 3 |
| ACCO 031 | Managerial Accounting | 3 |
| BUEX 002 | Computer Literacy in Business ^a | 0 |
| MANA 028 | Business and Statistics ^b | 3 |
| FINA 180 | Financial Management | 3 |
| MANA 156 | Organizational Behavior ^c | 3 |
| MARK 140 | Introduction to Marketing ^c | 3 |
| Total | | 24 |

NOTES:

- GEEN 023, 051 or BIEN 001 will substitute for this requirement.
- MATH 164 can substitute for MANA 028.
- Electrical engineering students may utilize either MANA 156 or MARK 140 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 degree program.

MATHEMATICS

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 080, MATH 081, MATH 082, MATH 083, plus nine additional hours of upper division MATH courses. Overload hours can be minimized or eliminated by consultation with an academic adviser.

PHYSICS

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 003 and PHYS 004, plus nine additional hours of upper division PHYS courses. Students who take EECE 121 or EECE 122 may not take PHYS 131 or PHYS 132 to satisfy the physics minor requirements.

COURSE DESCRIPTIONS

GENERAL ENGINEERING (GEEN)

GEEN 003. Engineering Orientation 0 sem. hrs.

No credit A one-hour-per-week series of lectures, discussions and engineering speakers to assist beginning sophomores to define more clearly their professional goals by acquainting them with diversified career options available to engineers. Topics include: engineering career exploration and development; cooperative education and internships; and job search, resume writing and interviewing techniques. All sophomores and transfer student are required to attend.

GEEN 010. Introduction to Engineering Problem Solving 2 sem. hrs.

Students are introduced to the engineering profession from a design and problem solving perspective. The design process is introduced along with creativity and creative techniques for finding solutions. Students learn team building techniques and compete in problem solving ventures designed to enhance their engineering experience. Writing and presentation skills are also introduced.

GEEN 011. Introduction to Engineering 1 sem. hr.

Individual departments provide lectures and prepare laboratory experiences intended to acquaint students with various engineering majors in the college. This course is designed to provide students with information that will allow students to select a major as well as for students to affirm their decision. The course covers civil and environmental, electrical and computer, mechanical and industrial engineering careers.

GEEN 018. Education for Technological Leadership – Team Dynamics 1 sem. hr.

S/U grade assessment.

GEEN 022. Introduction to Graphics for Engineers 2 sem. hrs.

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.

GEEN 023. Introduction to Engineering Computing 2 sem. hrs.

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.

GEEN 051. Introduction to Computer Programming 3 sem. hrs.

Students will be introduced to modern computer programming languages with an emphasis on object orientated programming. Different

programming languages are reviewed and contrasted. An open laboratory with significant programming experiences form an integral part of this course.

GEEN 052. Introduction to MatLAB 1 sem. hr.

GEEN 101. College of Engineering International Study 0 sem. hrs.

Structured pre-approval and continuous enrollment for students studying abroad in non-Marquette programs. Offered every term. *Prereq: Consent Required; Consent of College Office. Approved for full-time study at another college/university abroad, but will NOT be certified as full-time by Marquette University.*

GEEN 120. Ethical Dimensions of Engineering 3 sem. hrs.

Foundations of ethical values and their application to issues in engineering practice. Technology's impact on society. Codes of ethics of engineering societies. Analysis and discussion of conflict cases. Offered spring term. *Prereq: Jr. stndg.*

GEEN 190. College of Engineering Undergraduate International Exchange 0 sem. hrs.

Study abroad as a part of an international student exchange program. Upon approval, students are enrolled in a college or university abroad as a full-time student for one or two terms. Course credits transfer to Marquette. *Prereq: Consent Required; Consent of College of Engineering.*

GEEN 192. College of Engineering Undergraduate Affiliated Study Abroad 0 sem. hrs.

This is a 0-credit, full-time status course designed to keep students' files active while they participate in an affiliated study abroad program. *Prereq: Consent Required; or Consent Required; Consent of College of Engineering and the Study Abroad Program.*

BIOMEDICAL ENGINEERING (BIEN)

Chairperson and Professor: Winters
Curriculum Coordinator: Silver-Thorn
Professor: Brower, Dawson, D. Green, Harris, Hendee, Horgan (Emeritus), Jeutter, Josse, Miner, Sances (Emeritus), Seitz
Adjunct Professor: Battocletti, Cowley, Hoffman, Hudetz, Hyde, Larson, Madden, Merritt, Pintar, Sarna, Schwab, J. Smith, Wartier, Wertsch, Yoganandan
Associate Professor: Brown, Cariapa, Clough, Johnson, Krenz, Marklin, Olson, Riedel, Ropella, Silver-Thorn
Adjunct Associate Professor: Abler, Greene, Jodat, Schlager, Schmeling, Soto, Toth
Assistant Professor: Audi, Goldberg, Nagurka, Scheidt, Schmit
Adjunct Assistant Professor: Ackman, Bandettini, DeYoe, Donahue, Donnell, Hause, Hubbard, Liu, Lyon, Marks, Merker, Molthen,

Ninomiya, P. Smith, Patel, Prieto, Rickaby, Schmainda, Shi, Street, Wang

BIEN 001. Introduction to Biomedical Engineering Methods 1 2 sem. hrs.

Introduction to biomedical engineering design and problem solving using computers. Key elements include flow-charting, statistics, 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. Programming assignments will use existing software packages as well as a high level programming language.

BIEN 002. Introduction to Biomedical Engineering Methods 2 2 sem. hrs.

Continuation of BIEN 001's professional Biomedical Engineer presentations and more advanced software applications and programming methods. *Prereq: BIEN 001.*

BIEN 042. Circuits Laboratory 2 0 sem. hrs.

Prereq: EECE 010 which may be taken concurrently and EECE 011 with minimum grade of C and EECE 012 which may be taken concurrently and EECE 041 with minimum grade of C.

BIEN 084. Statistics for Biomedical Engineering 1 sem. 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 080.*

BIEN 085. Object-oriented Biomedical Computing Applications 3 sem. hrs.

Prereq: BIEN 001 and BIEN 002.

#BIEN 091. Co-op Work Period 1 0 sem. 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 092S, 094S, etc. Fee.*

#BIEN 092. Co-op Grading Period 1 1 sem. 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 093. Co-op Work Period 2 0 sem. 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 092S, 094S, etc. Fee.*

#BIEN 094. Co-op Grading Period 2 1 sem. 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

▲ Indicates UCCS courses

charged for registration for Work Periods. No tuition is charged for Grading Periods. S/U grade assessment.*

#BIEN 095. Co-op Work Period 3 0 sem. 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 092S, 094S, etc. Fee.*

#BIEN 096. Co-op Grading Period 3
1 sem. 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 097. Co-op Work Period 4 0 sem. 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 092S, 094S, etc. Fee.*

#BIEN 098. Co-op Grading Period 4
1 sem. 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.*

*A nominal fee is charged for registration for work periods. No tuition is charged for grading periods.

BIEN 100. Biomedical Circuits and Electronics 3 sem. 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: MATH 083 and PHYS 004; or MATH 087 and PHYS 004.*

BIEN 112. Embedded Biomedical Instrumentation 3 sem. hrs.

Fundamentals of digital circuit design and analysis and the application to embedded biomedical instrumentation. Topics include micro-processor principles and programming and system design constraints for medical electronics. Laboratory will provide applications of concepts introduced in class. Offered fall term. *Prereq: BIEN 100.*

BIEN 146. Principles of Design 3 sem. 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). Offered fall Term. 2 hrs. lec., 2 hrs. lab. *Prereq: Sr. stndg; Co-op students, junior standing. Cross-listed with COEN 146, EECE 146, INEN 146 and MEEN 146.*

BIEN 147. Senior Design Project 3 sem. 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. Offered Spring semester. 2 hrs. lec., 2 hrs. lab. *Prereq: BIEN 146; Cross-listed with COEN 147, EECE 147, INEN 147 and MEEN 147.*

#BIEN 151. Topics in Biomedical Engineering 1-3 sem. hrs.

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. Offered occasionally. *Prereq: Jr. stndg.*

#BIEN 152. Analysis of Physiological Models 3 sem. 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 083; or Jr. stndg. and MATH 087.*

#BIEN 153. Applied Finite Element Analysis in Biomechanics 3 sem. hrs.

This course will introduce the finite element solution method for linear, static problems. The course will include calculation of element stiffness matrices, assembly of global stiffness matrices, exposure to various finite element solution methods, and numerical integration. Although the course will emphasize structural mechanics, heat transfer and fluid mechanics applications in finite element analysis also will be discussed. Computer assignments will include development of finite element code (FORTRAN or C) and also use of commercial finite element software (ANSYS and/or MARC). *Prereq: Sr. stndg. and BIEN 002 and ENME 130; or Sr. stndg. and ENME 130 and GEEN 040.*

BIEN 155. Signals and Systems for Biomedical Engineering 4 sem. 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. *Prereq: EECE 012 with minimum grade of C and MATH 083; or BIEN 100 with minimum grade of C and MATH 083; or EECE 012 with minimum grade of C and MATH 087; or BIEN 100 with minimum grade of C and MATH 087.*

#BIEN 157. Intelligent Biosystems
3 sem. hrs.

Principles and performance of physiological control systems with emphasis on the use of simulation as a tool to understand normal and pathological dynamic mechanisms. Models of human technology biosystems targeting the interface and clinical decision-support systems. Survey of intelligent systems tools (adaptive neural networks, fuzzy systems, genetic algorithms) for smart biomonitoring and approximating biocontrol systems. *Prereq: BIEN 155; or cons. of instr.*

#BIEN 160. Neural Engineering 3 sem. 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: MATH 083 and PHYS 004; or MATH 087 and PHYS 004.*

#BIEN 168. Rehabilitation Engineering: Prosthetics, Orthotics, Seating and Positioning 3 sem. hrs.

This course will present 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 to be covered 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: ENME 020; or ENME 022.*

#BIEN 170. Introduction to Biomaterials Science and Engineering 3 sem. 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 engineer-

ing that they are interested in. *Prereq: MEEN 060; or cons. of instr.*

#BIEN 172. Biotechnology Instrumentation
3 sem. hrs.

The presentation of biotechnology instrumentation will be based on the application of the following topics: boundary value problems (modeling of one and two dimensional distributions of temperature and electric fields); optics (sources, filters, cells, and sensors); control of electric fields; heat transfer and temperature control; motor control for mechanical and fluid movements. The molecular biology and engineering principles will be presented for each type of instrument or process. Students will be expected to analyze and evaluate commercially available systems, and propose design improvements.

#BIEN 175. Structure-Property Relationship of Biological Materials 3 sem. hrs.

This course is designed to critically review the structure-property relationships of biological materials. Structure-property relationships for skin, bone, ligaments, tendons, muscle, and organs will be discussed. The effect of pathology, state of the tissue, and age on material properties of tissues and organs will be discussed. This course also critically reviews the testing methods used to obtain mechanical behavior of the biological tissues and organs.

#BIEN 180. Systems Physiology 3 sem. hrs.
Analyses of the underlying physiologic and bio-engineering 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 182. Medical Imaging Physics
3 sem. 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: Jr. stndg. and PHYS 004; or Jr. stndg. and cons. of instr.*

#BIEN 183. Cardiopulmonary Mechanics
3 sem. 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 180 which must be taken concurrently or equivalent and BIEN 186 which*

must be taken concurrently or equivalent; or cons. of instr.

#BIEN 184. Image Processing for the Biomedical Sciences 3 sem. 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 080 and MATH 081; Knowledge of C programming or consent of instructor.*

BIEN 185. Computer Applications in Biomedical Engineering 3 sem. hrs.

Design and implementation of personal computer (PC) techniques for data acquisition and analysis in the Biomedical laboratory and clinical environments. Emphasis on data acquisition and algorithm design using the C language. Real time processing of analog signals accomplished during assigned projects on PC workstations. *Prereq: BIEN 002; or GEEN 021; or GEEN 040.*

BIEN 186. Transport Phenomena for Biomedical Engineers 3 sem. 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. *Prereqs: Either ENME 020 or 022; or cons. of instr. Prereq: ENME 022; or ENME 020; or cons. of instr.*

#BIEN 187. Biomedical Instrumentation Design 3 sem. 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 100 and BIEN 155; or EECE 111 and EECE 113.*

BIEN 188. Bioelectronics Design Lab 1
3 sem. hrs.

The use of medical instruments in the hospital environment. Understanding the principles of operation, safe operating procedures and methods of instrument selection. Design of experiments to measure physiological parameters. Actual medical instruments used under approximate clinical conditions. Report writing. 2 hrs. lec., 3 hrs. lab. *Prereq: EECE 041 and EECE 042 and EECE 111.*

BIEN 189. Bioelectronics Design Lab 2
3 sem. 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 188 and EECE 143.*

BIEN 191. Biomechanics Design Lab 1
3 sem. 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 100 and ENME 020 and ENME 130.*

BIEN 192. Biomechanics Design Laboratory 2 3 sem. hrs.

The Biomechanics Design Laboratory 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 191.*

193. Biocomputers Design Lab 1 3 sem. 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. Offered fall term. *Prereq: BIEN 100 and BIEN 112 and BIEN 155 and BIEN 185.*

BIEN 194. Biocomputers Design Lab 2
3 sem. hrs.

Continuation of BIEN 193 with emphasis on high performance computing in workstation environments. Offered spring term. *Prereq: BIEN 193.*

BIEN 195. Independent Study 1-4 sem. hrs.

Undergraduate independent study project of either a theoretical or experimental nature. Offered every term. *Prereq: Jr. stndg. and 3 MU QPA and cons. of instr. and cons. of dept. ch.; or Sr. stndg. and 3 MU QPA and cons. of instr. and cons. of dept. ch.*

Also carries graduate credit.

CIVIL AND ENVIRONMENTAL ENGINEERING (CEEN)

Interim Chairperson, Director of Graduate Studies, and Professor: Heinrich
Professor Emeriti: Faherty, Murphy, Zanon
Professor: Karshenas, Vinnakota
Adjunct Professor: Bauer, Kuemmel
Associate Professor: Crandall, Croveti, Drakopoulos, Foley, Melching, Wenzel, Zitomer
Adjunct Associate Professor: Sonntag, Vogel
Adjunct Assistant Professor: Dobersek, Meus, Schaefer

CEEN 010. Statics 3 sem. hrs.
 Fundamentals of forces and force systems. Application to particles and bodies in equilibrium. Emphasizing vector methods in two and three dimensions. Free body diagrams with and without friction. Centroids and moment of inertia. Offered each term. *Prereq:* MATH 081.

CEEN 020. Dynamics 3 sem. 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. Offered each term. *Prereq:* ENME 010.

CEEN 022. Statics and Dynamics 4 sem. 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. Offered each term. *Prereq:* MATH 081.

CEEN 032. Elementary Surveying 3 sem. 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. Offered fall term. 2 hrs. lec., 3 hrs. lab.

CEEN 043. Behavior and Properties of Engineering Materials 3 sem. hrs.
 Introduction to the characteristic properties and the fundamental phenomenological behavior of the materials used by engineers with emphasis on steel, concrete, wood, and asphalt. Laboratory experiment and testing is used to give knowledgeable perception of the behavior when materials are subjected to various loads. Probability concepts and statistical analysis of experimental data. Offered fall term. 2 hrs. lec., 3 hrs. lab. *Prereq:* ENME 130 which may be taken concurrently.

#CEEN 091. Co-op Work Period 1 0 sem. 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 091S, 092S, etc. Offered every term. Fee.*

#CEEN 092. Co-op Grading Period 1 1 sem. 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. Offered every term. No tuition is charged for Grading Periods. S/U grade assessment.*

#CEEN 093. Co-op Work Period 2 0 sem. 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 091S, 092S, etc. Offered every term. Fee.*

#CEEN 094. Co-op Grading Period 2 1 sem. 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. Offered every term. No tuition is charged for Grading Periods. S/U grade assessment.*

#CEEN 095. Co-op Work Period 3 0 sem. 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 091S, 092S, etc. Offered every term. Fee.*

#CEEN 096. Co-op Grading Period 3 1 sem. 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. Offered every term. No tuition is charged for Grading Periods. S/U grade assessment.*

#CEEN 097. Co-op Work Period 4 0 sem. 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 091S, 092S, etc. Offered every term. Fee.*

#CEEN 098. Co-op Grading Period 4 1 sem. 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. Offered every term. No tuition is charged for Grading Periods. S/U grade assessment.*
**A nominal fee is charged for registration for work periods. No tuition is charged for grading periods.*

CEEN 110. Structural Analysis 3 sem. hrs.
 Loads on structures, reactions, shears, axial forces and moments in statically determinate structures. Application of arithmetical and computer methods of analysis. Use of influence lines for moving loads. Study of methods for determining deflections in statically determinate structures. Offered spring term and summer. *Prereq:* ENME 130.

#CEEN 111. Matrix Structural Analysis 3 sem. hrs.
 This course provides a short review of symbolic and numerical linear algebra computations using commercial software, and introduces the principle of virtual work for solving statically determinate structural analysis problems. The course includes derivation of the stiffness equations for truss and frame members using the principle of virtual-displacements, and application of the matrix stiffness method for computing forces and displacements in two- and three-dimensional statically indeterminate structures. The course outlines proper use of commercial-grade software and includes discussion of approximate techniques that can be used to validate software-generated solutions. Offered fall term. *Prereq:* CEEN 110.

CEEN 113. Steel Design 1 3 sem. 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. Offered fall term. *Prereq:* CEEN 110.

#CEEN 114. Steel Design 2 3 sem. hrs.
 Continuation of CEEN 113. Design of beam-columns, plate girders, continuous beams, and composite beams. Design of connections and assemblages. Introduction to the plastic design method. Offered spring term of alternate years. *Prereq:* CEEN 113.

#CEEN 123. Urban Hydrology and Stormwater Management 3 sem. 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. Offered fall term. *Prereq:* ENME 151.

#CEEN 124. Air Pollution Engineering 3 sem. 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 126. Hydraulic Engineering 3 sem. hrs.
 Fundamentals and applications of hydrostatics and hydrodynamics including pipe flow and pipeline network design, open channel flow, gradually varied flow, hydraulic jump, and spillway design. Pumps and pumping station design. Groundwater flow and seepage. Laboratory assignments and demonstrations. Offered spring and summer terms. 2 hrs. lec., 2 hrs. lab. *Prereq:* ENME 151.

#CEEN 127. Water Resources Engineering 3 sem. 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. Offered spring term alternate years. *Prereq:* CEEN 126.

#CEEN 128. Groundwater Engineering

3 sem. hrs.

Physical and chemical properties and principles of groundwater. Groundwater geology and interaction with the hydrologic cycle. Groundwater movement and flow nets. Groundwater contamination. Offered spring term alternate years.

Prereq: CEEN 126 and CEEN 150.

#CEEN 129. Geographical Information Systems in Engineering and Planning

3 sem. 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. stndg.*

CEEN 130. Mechanics of Materials

3 sem. hrs.

Fundamentals of stress, strain, axial loading, torsion, bending, transverse loading, stress and strain transformations, beam deflections, energy methods, columns. Offered each term. *Prereq: ENME 010.*

CEEN 139. Engineering Fundamentals Review

1 sem. hr.

Review of basic science, mathematics, engineering science and economics. Offered every term. *Prereq: Sr. stndg; Same as MEEN 190. S/U grade assessment.*

CEEN 144. Reinforced Concrete Design

3 sem. 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. Offered fall term. *Prereq: CEEN 110.*

#CEEN 145. Advanced Strength and Applied Stress Analysis

3 sem. 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. Offered fall term. *Prereq: ENME 130.*

#CEEN 146. Advanced Concrete and Masonry Design

3 sem. hrs.

Continuation of CEEN 144, presenting advanced concrete theory and design: introduction to masonry design. Emphasis on code requirements and use of various design aids including computer-aided design. Design of two-way slabs and reinforced concrete structural systems. Design and layout of reinforced concrete and concrete masonry walls. Offered spring term alternate years. *Prereq: CEEN 144.*

#CEEN 147. Prestressed Concrete Design

3 sem. 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. Offered spring term, alternate years. *Prereq: CEEN 144.*

#CEEN 148. Timber Structures 3 sem. hrs.
Study of basic wood properties and design considerations. Design and behavior of wood joints, beams, columns and beam columns. Introduction to plywood and glue laminated members. Analysis and design of structural diaphragms and shear walls. Offered fall term. 2 hrs. lec., 3 hrs. lab. *Prereq: CEEN 110.*

#CEEN 149. Bridge Design 3 sem. hrs.
Overview of the design and analysis of bridges in steel, concrete and timber. Determination of loads acting on bridges and the study of methods for their analysis. Review of different bridge types. Application of design codes for the design of bridge components in steel, concrete and timber. Offered every spring term, alternate years. *Prereq: CEEN 111 and CEEN 113 and CEEN 144; or cons. of instr.*

CEEN 150. Environmental Engineering

3 sem. hrs.

Introduction to current environmental problems, community public health and risk assessment. Water resources, the hydrologic cycle, public water supplies, storage and community water usage. Wastewater quantities and characteristics. Review of systems for the treatment of waters and wastewaters. An overview of community air pollution, solid waste, noise pollution and other environmental concerns. Offered fall term. *Prereq: Jr. stndg.*

CEEN 151. Mechanics of Fluids 3 sem. 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. Offered each term. *Prereq: ENME 010.*

#CEEN 154. Environmental Chemistry

3 sem. 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. Offered fall term. *Prereq: Sr. stndg. and CHEM002.*

#CEEN 155. Industrial Wastewater Management

3 sem. 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. Offered spring term of alternate years. *Prereq: CEEN 150.*

#CEEN 156. Treatment Plant Design and Operation

3 sem. 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. Offered fall term.

Prereq: CEEN 150.

#CEEN 157. Hazardous and Industrial Waste Management

3 sem. 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. Offered spring term alternate years. *Prereq: Sr. stndg; or cons. of instr.*

CEEN 162. Geotechnical Engineering

3 sem. hrs.

Fundamental properties and the engineering characteristics of soil as a particulate mass aggregate. Origin, the formation and the development of soil deposits, the physical and hydraulic properties and the methods of predicting the behavior of soils for engineering applications are studied. Properties are investigated in the laboratory and reports are required. Offered spring term. 2 hrs. lec., 2 hrs. lab. *Prereq: ENME 130.*

#CEEN 163. Foundation Engineering

3 sem. hrs.

Design of foundation members subjected to vertical and eccentric loads. The effects of soil origin and deposition and the current codes and conventions are analyzed in relation to bearing capacity and settlement of structures. Offered alternate spring semesters.

CEEN 170. Introduction to Transportation Engineering

3 sem. hrs.

Emphasis on forecasting methodologies — applications to transportation. Use of spreadsheets for simple and multiple linear regression, statistical charts. Airport airspace 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. Offered spring term. *Prereq: Jr. stndg.*

#CEEN 172. Highway Planning and Design
3 sem. 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. Offered spring term. 2 hrs. lec., 2 hrs. lab. *Prereq: CEEN 170.*

CEEN 174. Pavement Design 3 sem. hrs.
Study of the behavior and properties of pavements with emphasis on asphalt and portland cement concrete pavements. Structural design of pavement systems using current design methods. Use of computer programs and their application in the design of pavements. *Prereq: CEEN 043 and CEEN 162.*

CEEN 176. Traffic Characteristics and Design 3 sem. 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. Offered fall term. *Prereq: CEEN 170.*

CEEN 180. Introduction to Construction Management 3 sem. hrs.

Construction contracts, contract bonds, construction funding, cash flow analysis, labor productivity and cost, equipment productivity and cost. Analytical techniques for project planning and scheduling. Construction safety. Offered fall term. *Prereq: Sr. stndg. and INEN 120; or cons. of instr.*

#CEEN 181. Construction Cost Estimating
3 sem. hrs.

A review of various cost estimating methods and their applications. Study of quantity take-off techniques used in construction cost estimating. Analysis of labor, material, equipment and indirect costs. Special attention will be given to the preparation of detailed estimates based on quantity take-off and construction productivity. Offered spring term. *Prereq: Sr. stndg. and CEEN 180; or Sr. stndg. and cons. of instr.*

#CEEN 182. Computer Applications in Construction 3 sem. hrs.

Study of information technologies that can be used in supporting the managerial decision making. Computer applications in project scheduling and control. Computer applications in cost estimating. The application of digitizers, spreadsheets and database management systems in construction. Offered spring term. *Prereq: Sr. stndg. and CEEN 180; or cons. of instr.*

#CEEN 183. Probability Applications in Engineering Planning and Design
3 sem. hrs.

Basic concepts of probability and statistics and their applications in modeling and solving engineering problems. The topics include: random variables, distributions, mathematics of probability, functions of random variables, regression analysis, quality assurance and acceptance sampling. *Prereq: MATH 083.*

#CEEN 184. Construction Seminars
3 sem. hrs.

Nature of the construction industry. Management and business principles. Risk management. Contractual and legal requirements. Types of construction projects. Labor relations. Innovation and technology application. Offered occasionally. *Prereq: Sr. stndg; or cons. of instr.*

#CEEN 185. Urban Planning for Civil Engineers 3 sem. 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. Offered spring term. *Prereq: cons. of instr.*

#CEEN 186. Law for Engineers 3 sem. 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. stndg; or cons. of instr.*

CEEN 187. Environmental Seminar
0 sem. hrs.

Topics related to environmental engineering, including subjects such as air pollution, urban hydrology and stormwater management, wastewater treatment and hazardous waste management.

#CEEN 188. Topics in Civil Engineering
1-3 sem. hrs.

Course content announced each term. Topics may include optimal structural design; computer-aided design and analysis of structural, transportation and wastewater systems; soil structure interaction; structural design for random loadings. Offered occasionally. *Prereq: cons. of instr.*

CEEN 189. Civil Engineering Design
4 sem. hrs.

Design of selected civil engineering project 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 engineer from local firm acts as client and consultant to design team. Emphasis is placed on student initiative, responsibility and resourcefulness in an open-ended project. A final group design report is required. Emphasis on technical communications, professional ethics and engineering practices. Offered spring term. 3 hrs. lec., 3 hrs. lab. *Prereq: CEEN 113 and CEEN 144; or cons. of instr.*

CEEN 190. Professionalism, Ethics, and Management in Engineering Organizations 3 sem. hrs.

Fundamentals of engineering professional practice. Emphasis on ethics, codes, safety, consulting benefits and risks. Professional registration and licensing. Responsibilities in a technological society.

CEEN 192. Engineers and Technology Through History 3 sem. 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 195. Independent Study 1-3 sem. hrs.
Undergraduate independent study project of either a theoretical or experimental nature. Offered every term. *Prereq: Jr. stndg. and 3 MU QPA and cons. of instr. and cons. of dept. ch.*

Also carries graduate credit.

ENGINEERING MECHANICS (ENME)

Curriculum Coordinator and Professor: Heinrich Professor: Nigro

Associate Professor: Crandall, Foley, Nagurka, Schimmels, Stango, Weber

Assistant Professor: Majdalani

Adjunct Assistant Professor: Meus, Schaefer

ENME 010. Statics 3 sem. hrs.

Fundamentals of forces and force systems. Application to particles and bodies in equilibrium. Emphasizing vector methods in two and three dimensions. Free body diagrams with and without friction. Centroids and moment of inertia. Offered each term. *Prereq: MATH 081.*

ENME 020. Dynamics 3 sem. 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. Offered each term. *Prereq: ENME 010.*

ENME 022. Statics and Dynamics 4 sem. 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. Offered each term. *Prereq: MATH 081.*

ENME 130. Mechanics of Materials
3 sem. hrs.

Fundamentals of stress, strain, axial loading, torsion, bending, transverse loading, stress and strain transformations, beam deflections, energy methods, columns. Offered each term. *Prereq: ENME 010.*

ENME 151. Mechanics of Fluids 3 sem. 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. Offered each term. *Prereq: ENME 022 and MATH 082; or ENME 020 and MATH 082.*

ELECTRICAL AND COMPUTER ENGINEERING (EECE) and (COEN)

Chair and Professor: Yaz

Associate Chair, Associate Professor, Electrical

Engineering Curriculum Coordinator: Schneider

Associate Professor and Computer

Engineering Curriculum Coordinator: Riedel

Professor Emeritus and Director of

Undergraduate Studies: Moeller

Adjunct Associate Professor and Director of

Undergraduate Electrical Engineering

Laboratories: Jacoby

Assistant Professor and Director of

Undergraduate Computer Engineering

Laboratories: Povinelli

Professor and Director of Graduate Studies:

Josse

Professor Emeriti: Heinen, Horgan, Ishii

Professor: Arkadan, Corliss, Demerdash,

Green, Harris, Hock, Joshi, Jeutter, Matthys,

Seitz

Associate Professor: Brown, Feng, Richie

Assistant Professor: Johnson

Adjunct Professor: Lade

Adjunct Associate Professor: Branson, Davis,

Jodat, Mendez, Schlager, Schmidt

Adjunct Assistant Professor: Doerr, Glusick,

Hoepfner, Kennedy, Naik, Perez, Shana

Computer Engineering (COEN)

Curriculum Coordinator: Riedel

COEN 001. Freshman Seminar 0 sem. hrs.

Introduction to electrical engineering and computer engineering through presentations by faculty, graduate students, upper-class undergraduate students, and alumni. A formal opportunity for EECE freshman to interact with their peers and other members of the EECE Department. Crosslisted with EECE 001. S/U grade assessment.

COEN 020. Software Methodologies

3 sem. 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. Offered spring term. *Prereq: GEEN 051; or COSC 051.*

COEN 030. Introduction to Computer

Hardware and Software 3 sem. 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 man-

agement, 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 80x86 assembly language and in the JAVA programming language. Offered fall term. *Prereq: GEEN 051; or COSC 051.*

COEN 051. Introduction to Computer

Programming 3 sem. 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. COEN 051 cross-listed with GEEN 051.

#COEN 091. Co-Op Work Period 1 0 sem. 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 092, 094, etc. Fee.*

#COEN 092. Co-Op Grading Period 1

1 sem. 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 093. Co-Op Work Period 2 0 sem. 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 092, 094, etc. Fee.*

#COEN 094. Co-Op Grading Period 2

1 sem. 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 095. Co-Op Work Period 3 0 sem. 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 092, 094, etc. Fee.*

#COEN 096. Co-Op Grading Period 3

1 sem. 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 097. Co-Op Work Period 4 0 sem. 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 092, 094, etc. Fee.*

#COEN 098. Co-Op Grading Period 4

1 sem. 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.*

**A nominal fee is charged for registration for work periods. No tuition is charged for grading periods.*

COEN 120. Data Structures for Engineers

3 sem. hrs.

Data structures and their applications. Includes the study of such data structures as lists, stacks, queues, and trees and their related algorithms. Knowledge of the JAVA programming language is a prerequisite. *Prereq: GEEN 051; or COSC 051; Cross-listed with COSC 154.*

COEN 121. Analysis of Algorithms

3 sem. hrs.

Computational complexity and types of algorithms such as divide-and-conquer, greedy, probabilistic, graph transversal, heuristic, and parallel algorithms. Same as COSC 151. *Prereq: COSC 055 and MATH 090; or COEN 120 and MATH 090; or COSC 154 and MATH 090; or COSC 055 and MATH 145; or COEN 120 and MATH 145; or COSC 154 and MATH 145.*

COEN 122. Formal Languages and

Computability 3 sem. hrs.

The hierarchy of formal languages, automata, and grammars with application to parsing. Limitations of computational processes and the implications of the Church-Turing thesis. *Prereq: COSC 055 and MATH 090; or COEN 120; or COSC 154; Cross-listed with COSC 157.*

COEN 123. Compiler Construction

3 sem. hrs.

Techniques of lexical analysis, parsing, and code generation, including theoretical foundations and the practical concerns of implementations. *Prereq: COEN 120 and COEN 122; or COEN 122 and COSC 154; or COEN 122 and COSC 148; or COEN 120 and COSC 157; or COSC 154 and COSC 157; or COSC 148 and COSC 157; Cross-listed with COSC 170.*

COEN 130. Fundamentals of Artificial

Intelligence 3 sem. hrs.

Survey of topics in the field of artificial intelligence with emphasis on the underlying concepts on which intelligent systems are developed (such as production systems, heuristics, the predicate calculus and theorem proving techniques). Same as COSC 159. *Prereq: COSC 152.*

#COEN 131. Neural Networks and Neural Computing 3 sem. hrs.

Introduction to artificial neural networks and neural computing. Multi-layer perception models and back propagation. Recurrent and feed-forward associative neural networks. Kohonen models and counter-propagation networks. Adaptive resonance theory and Boltzmann machines. Simulated annealing. Applications include: optimization, pattern recognition in signal processing and control algorithms. *Prereq: Sr. stndg. and 3 MU QPA and COEN 030; or Sr. stndg. and 3 MU QPA and COSC 148; or cons. of instr.*

COEN 140. Computer Engineering Laboratory 2 sem. hrs.

This course reinforces concepts in computer architecture and systems software courses. Laboratory exercises include: designing, building, and testing circuits using SSI and MSI components, as well as design and implementation of a variety of operating system utility software. Topics include machine level representation of data, interfacing, communication, process synchronization, device management, and file systems. 1 hrs. lec., 3 hrs. lab. *Prereq: COEN 171 and COEN 180.*

COEN 146. Principle of Design 3 sem. 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). Offered Fall semester. 2 hrs. lec., 2 hrs. lab. *Prereq: Sr. stndg; Co-op students, junior standing. Cross-listed with BIEN 146, EECE 146, INEN 146 and MEEN 146.*

COEN 147. Senior Design Project 3 sem. 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. Offered Spring semester. 2 hrs. lec., 2 hrs. lab. *Prereq: COEN 146; Cross-listed with BIEN 147, EECE 147, INEN 147 and MEEN 147.*

COEN 150. Principles of Database Systems 3 sem. hrs.

The internal, conceptual, and external levels of database systems as reflected in the relational, network, and hierarchical database models. Query languages. File organizations appropriate for database systems. Principles and methods for database designs. Offered fall term. *Prereq: COEN 120; or COSC 055; or COSC 154; Cross-listed with COSC 153.*

#COEN 151. Introduction to Computer Graphics 3 sem. hrs.

Introduction to computer graphics algorithm design and implementation involving 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. Design elective. *Prereq: Proficiency in at least one high level computing language.*

#COEN 152. Microcomputer Interfacing 3 sem. hrs.

The study of microcomputer hardware and software interfacing technologies; system busses, system interrupts, DMA technologies, interfacing to peripherals, digital communications, and graphics interfacing. DESIGN ELECTIVE. Offered fall term. *Prereq: COEN 171.*

COEN 153. Principles of Database Systems 3 sem. hrs.

COEN 160. Numerical Analysis 3 sem. hrs. Numerical solution of algebraic and transcendental equations, linear systems and the algebraic equations, numerical solution of differential equations and finite difference methods. Offered fall term. Same as COSC 146 and MATH 146. *Prereq: COSC 051 and MATH 081; or GEEN 051 and MATH 081.*

#COEN 161. Information and Coding Theory 3 sem. hrs.

Introduction to information measure, mutual information, self-information, entropy, encoding of information, discrete and continuous channels, channel capacity, error detection, error correcting codes, group codes, cyclic codes, BCH codes, convolution codes, and advanced codes. Offered alternate years. *Prereq: Sr. stndg. and 3 MU QPA; or cons. of instr.; Cross-listed with EECE 214.*

#COEN 168. Topics in Computer Engineering 3 sem. hrs.

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. *Prereq: cons. of instr.*

#COEN 170. Advanced Switching Theory and Design 3 sem. hrs.

Advanced topics applicable to the design of large-scale digital systems. Theory of synchronous and asynchronous functions. Algorithmic State Machine design methods. Concepts of state assignment. Implementation with MSI, LSI and programmable logic. Design of Linked Machines. Register Transfer Language description of processor control algorithms as a design tool. Reed-Muller algebraic descriptions. Linear sequential circuit design of digital filters. Design elective. *Prereq: EECE 112 and EECE 143 which may be taken concurrently.*

#COEN 171. Computer Hardware 3 sem. 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. Offered spring term. *Prereq: COEN 030 with minimum grade of C*

and EECE 112 with minimum grade of C; or COSC 148 with minimum grade of C and EECE 112 with minimum grade of C.

#COEN 172. Microprocessor System Design 3 sem. hrs.

The study of microprocessors, memory, peripherals and integrated circuits used in the design of microcomputer systems. Examples, homework, and design projects using specific devices from a variety of manufacturers. Design validation with computer-aided circuit simulation software. Design elective. *Prereq: COEN 171.*

#COEN 173. Computer Architecture 3 sem. 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. Offered fall term. *Prereq: Sr. stndg. and 3 MU QPA and COEN 171; or cons. of instr.; Cross-listed with EECE 217.*

#COEN 180. Software Systems 3 sem. hrs. This is a three-credit hour course providing an overview of the major issues in the design and implementation of operating systems and language translators. Operating systems topics include: tasking and processing, process coordination and synchronization, scheduling and dispatch, physical and virtual memory organization, device management, file systems, security, communications and networking. Language translation topics include storage management, finite state automata and regular expressions, context-free grammars and push-down automata, code translation and optimization techniques, and programming language semantics. *Prereq: COEN 020 and COEN 120; or COEN 020 and COSC 154.*

#COEN 181. Software Engineering 3 sem. hrs.

Fundamental software engineering methodologies are emphasized. Structure program design and Warner/Orr diagrams, logical input/output definition and design, logical process design, coding and test, software life-cycle, software requirements and configurations, function-oriented and object-oriented approaches, user interface and real-time system designs, and Computer-Aided Software Engineering (CASE) tools. Design elective for EECE. *Prereq: COEN 030.*

#COEN 182. Algorithm Analysis and Applications 3 sem. hrs.

Concepts of software design and problem solving methodologies. Review of data structures. Algorithm efficiency and correctness analysis. Stages in program design. Problem solving strategies using artificial intelligence concepts and non-algorithm approaches. Heuristic search and expert systems. Parallel algorithms. NP-completeness. Software life-cycle, requirements and configurations, function-oriented design and human interface design. Computer-Aided Software Engineering (CASE) tools. *Prereq: Sr. stndg. and 3 MU QPA and COEN 030 and COEN 120; or Sr. stndg. and 3 MU*

QPA and COEN 030 and COSC 154; or cons. of instr.

#COEN 183. Operating Systems 3 sem. hrs. Fundamental concepts of operating systems including: memory management, scheduling, concurrent processing, device management, file systems, networking, security, and system performance. Examples are drawn from legacy and modern operating systems. *Prereq: COSC 055 and COSC 148; or COEN 120; or COSC 154; Cross-listed with COSC 149.*

COEN 195. Independent Study 1-4 sem. hrs. Undergraduate independent study project of either a theoretical or experimental nature. *Prereq: Jr. stndg. and 3 MU QPA and cons. of instr. and cons. of dept. ch.; or Sr. stndg. and 3 MU QPA and cons. of instr. and cons. of dept. ch.*

Also carries graduate credit.

Electrical Engineering (EECE)

Curriculum Coordinator: Schneider

EECE 001. Freshman Seminar 0 sem. hrs. Introduction to electrical engineering and computer engineering through presentations by faculty, graduate students, upper-class undergraduate students and alumni. A formal opportunity for EECE freshmen to interact with their peers and other members of the EECE Department. S/U grade assessment.

EECE 010. Electronic Devices and Applications

3 sem. 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. Offered spring term. *Prereq: EECE 011 with minimum grade of C.*

EECE 011. Electric Circuits 1 3 sem. hrs. Kirchhoff's laws. Mesh, nodal, general nodal and loop analysis of resistive circuits. Linearity and superposition. Source transformations. Thevenin's and Norton's theorems. Natural and forced response of transient circuits of first and second order. Computer analysis and design of linear circuits. Offered fall term. *Prereq: MATH 081 which may be taken concurrently.*

EECE 012. Electric Circuits 2 3 sem. hrs. Sinusoidal steady-state response. Frequency response. Average power and rms values. Complex power. Polyphase circuits. Complex frequency and frequency response. Magnetically coupled circuits. Two-port networks. Laplace transform theory and applications. Computer analysis and design of linear circuits. Offered spring term. *Prereq: EECE 011 with minimum grade of C.*

EECE 041. Circuits Laboratory 1 1 sem. 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 resis-

tors, inductors, capacitors and op-amps are used. Emphasis placed on DC and transient response of circuits. 1 hr. lec., 2 hrs. lab. EECE 011 must be taken concurrently.

EECE 042. Circuits Laboratory 2 1 sem. 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 010 which may be taken concurrently and EECE 011 with minimum grade of C and EECE 012 which may be taken concurrently and EECE 041 with minimum grade of C.*

#EECE 091. Co-op Work Period 1 0 sem. 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 092, 094, etc. Fee.*

#EECE 092. Co-op Grading Period 1

1 sem. 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.*

#EECE 093. Co-op Work Period 2 0 sem. 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 092, 094, etc. Fee.*

#EECE 094. Co-op Grading Period 2

1 sem. 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.*

#EECE 095. Co-op Work Period 3 0 sem. 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 092, 094, etc. Fee.*

#EECE 096. Co-op Grading Period 3

1 sem. 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.*

#EECE 097. Co-op Work Period 4 0 sem. 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 092, 094, etc. Fee.*

#EECE 098. Co-op Grading Period 4

1 sem. 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.*

**A nominal fee is charged for registration for work periods. No tuition is charged for grading periods.*

EECE 100. Electric Circuits and Electronics

4 sem. 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: MATH 083 and PHYS 004.*

EECE 109. Electric Circuits and Machinery

3 sem. hrs. Circuit modeling; basic solution methods for d-c and a-c circuits; d-c and a-c machines. *Prereq: PHYS 004; May not be taken for credit by EECE students.*

EECE 111. Analog Electronics 4 sem. 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. Offered spring term. *Prereq: EECE 010 with minimum grade of C and EECE 012 with minimum grade of C*

EECE 112. Digital Electronics 4 sem. 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. Offered fall term. *Prereq: Jr. stndg.*

EECE 113. Linear Systems Analysis

4 sem. 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: EECE 012 with minimum grade of C and MATH 083; or EECE 100 with minimum grade of C and MATH 083; or BIEN 100 with minimum grade of C and MATH 083; or EECE 109 with minimum grade of C and MATH 083.*

EECE 114. Physical Principles of Solid State Devices 3 sem. 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. Offered fall term. *Prereq: EECE 010 with minimum grade of C and EECE 121 with minimum grade of C and PHYS 004.*

EECE 121. Electromagnetic Fields 1 4 sem. 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. Offered fall term. *Prereq: EECE 012 with minimum grade of C and MATH 082 and PHYS 004; knowledge of a higher level computer language.*

EECE 122. Electromagnetic Fields 2 3 sem. 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. Offered spring term. *Prereq: EECE 121 with minimum grade of C.*

EECE 123. Electromechanical Energy Conversion 3 sem. 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 applied to electromagnetic, electrostatic-type electromechanical energy conversion devices. Offered spring term. *Prereq: EECE 121 with minimum grade of C.*

EECE 141. Electrical Instrumentation Laboratory 2 sem. hrs.

Develops familiarity with typical electronic instruments and terminology. Combines theory with experience to analyze and design electrical networks. Learning experimental technique and documentation. Offered fall term. 1 hr. lec., 3 hrs. lab. *Prereq: EECE 010 with minimum grade of C and EECE 012 with minimum grade of C and EECE 041 with minimum grade of C.*

EECE 142. Analog Electronics Laboratory 2 sem. 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. Offered fall term. 1 hr. lec., 3 hrs. lab. *Prereq: EECE 111 with minimum grade of C and EECE 141 with minimum grade of C.*

EECE 143. Digital Electronics Laboratory 2 sem. 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: COEN 030 which may be taken concurrently and EECE 041 with minimum grade of C or equivalent and EECE 112 with minimum grade of C; or BIEN 185 which may be taken concurrently and EECE 041 with minimum grade of C or equivalent and EECE 112 with minimum grade of C.*

EECE 145. Advanced Electrical Engineering Laboratory 3 sem. 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. Offered spring term. 2 hrs. lec., 2 hrs. lab. *Prereq: cons. of instr.*

EECE 146. Principles of Design 3 sem. 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). Offered Fall semester. 2 hrs. lec., 2 hrs. lab. *Prereq: Sr. stndg; Co-op students, junior standing. Cross-listed with BIEN 146, COEN 146, INEN 146 and MEEN 146.*

EECE 147. Senior Design Project 3 sem. 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. Offered Spring semester. 2 hrs. lec., 2 hrs. lab. *Prereq: EECE 146; Cross-listed with BIEN 147, COEN 147, INEN 147 and MEEN 147.*

#EECE 150. Control Systems 3 sem. 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: EECE 113.*

#EECE 151. Topics in Computers and Control 3 sem. hrs.

Course content announced prior to each term. Student may enroll in the course more than once because subject matter changes. Possible topics include microprogramming, microcomputer topics, computer architecture, optimization techniques, random processes, nonlinear control systems, motor control circuits, and large scale systems design. *Prereq: cons. of instr.*

#EECE 152. Introduction to Communication Systems 3 sem. hrs.

Orthogonality and signal representation. The Fourier transform and applications, power spectral density, amplitude modulation, angle modulation, pulse modulation, frequency modulation and digital transmission. *Prereq: EECE 113.*

#EECE 153. Digital Control Systems 3 sem. hrs.

Review of sampling processes, discrete time linear systems analysis and z-transforms. 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: EECE 113 with minimum grade of C.*

#EECE 157. Digital Signal Processing 3 sem. hrs.

Mathematical descriptions of discrete-time signals and systems are presented using block diagrams, signal flow graphs, and difference equations. The sampling and reconstruction of continuous-time signals is presented. Frequency analysis techniques are covered, including the z-transform, the Discrete Fourier Transform, and the Fast Fourier Transform. Simple digital filter design examples are presented. DESIGN ELECTIVE. *Prereq: EECE 113.*

#EECE 160. Electrical Properties of Solids 3 sem. hrs.

Electrical properties of solids are explained in terms of various physical models. The roles of crystallinity, defects (point, line, surface and volume), and microstructure are explored. *Prereq: EECE 010.*

#EECE 161. Dielectric Properties of Material 3 sem. hrs.

The principles governing dielectric breakdown and dielectric polarization in materials are explored. These are related to the microscopic and macroscopic nature of materials. *Prereq: EECE 012 and EECE 121.*

#EECE 162. Device Electronics 3 sem. hrs.

Analysis and design of solid state devices for use in integrated circuits. Topics covered include: physics of semiconductor materials, metal-semiconductor contacts, p-n junctions, bipolar transistors, properties of metal-oxide-silicon system, and MOS field effect transistors. Emphasis is placed on the design of solid state devices, and on their applications in integrated

circuits. DESIGN ELECTIVE. *Prereq: EECE 111 and EECE 121.*

#EECE 164. Integrated Microelectronic Circuits 3 sem. 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 010 and EECE 112.*

#EECE 165. Design with Analog Integrated Circuits 3 sem. hrs.

This course focuses on the design of analog circuits using "standard" analog integrated circuits as building blocks. Since this course deals mostly with the design aspects, "rules of thumb" pertinent to the design process are described and discussed. The following topics are covered in this course: power supply design, op-amp circuit design, active filter design, analog and digital display circuits, passive component selection and miscellaneous analog integrated circuits and their applications. Students design a series of circuits during the course of the term which form the individual building blocks of a more complicated analog circuit package. DESIGN ELECTIVE. *Prereq: EECE 111 and EECE 142.*

EECE 166. Surface Acoustic Wave Devices 3 sem. 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: EECE 113 and EECE 121; or cons. of instr.*

#EECE 168. Topics in Electrical Engineering 3-4 sem. hrs.

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes.

#EECE 173. Optical Fiber Communications 3 sem. 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 EECE 121.*

#EECE 174. Antenna Theory and Design 3 sem. 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. Offered occasionally. DESIGN ELECTIVE. *Prereq: EECE 122.*

#EECE 175. Wireless Communications 3 sem. 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: EECE 113 and EECE 121.*

#EECE 176. Sensor Devices: Theory, Design and Applications 3 sem. 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.*

#EECE 181. Power Electronics 3 sem. 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 power electronic systems. DESIGN ELECTIVE for EECE Program. *Prereq: EECE 111 and EECE 113.*

#EECE 182. Power Systems 3 sem. hrs. Elements of electric power systems; fundamental concepts and techniques for design and analysis; per unit system; load flow; economic dispatch; symmetrical components; balanced and unbalanced fault calculations, system instrumentation and power system protection. DESIGN ELECTIVE. *Prereq: EECE 012 and EECE 113.*

EECE 183. Special Topics in Power Systems and Devices 3 sem. hrs.

Course content announced prior to each term. Students may enroll in the course more than once because subject matter changes. Possible course subjects are power electronics for machine and drive systems, electrical transients, faults and protection in power systems, and advanced topics in the electric power engineering area.

#EECE 184. Applied Finite Elements in Electromagnetics 3 sem. 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, magneto-

static and electrostatic analysis, and the use of commercially available software packages. *Prereq: EECE 121 or equivalent.*

#EECE 185. Design and Analysis of Electric Motors in Adjustable Speed Drives 3 sem. 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. Design of ac induction, synchronous, universal and dc conventional as well as brushless dc motors, and low horsepower motors in adjustable speed drives is covered. Effects of space and time harmonics on motor design and performance are covered including harmonic abatement for control of torque pulsation. Modern modeling techniques are studied and used throughout. DESIGN ELECTIVE. *Prereq: EECE 012 or equivalent and EECE 121 or equivalent and EECE 123 or equivalent.*

#EECE 186. Principles of Design of Power Systems Protection and Monitoring 3 sem. 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. Balanced and unbalanced faults include single and multiple unbalances. Design and hierarchical coordination of protection systems for interconnected generation, transmission and distribution facilities in power systems. This includes integrated generator-transformer-busbar-transmission line-load protection and analysis of operation under fault conditions. DESIGN ELECTIVE. *Prereq: EECE 012 or equivalent and EECE 121 or equivalent and EECE 123 or equivalent.*

#EECE 187. Electrical Transients and Surges in Power Systems and Devices 3 sem. hrs.

The study of 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. Successive reflections, transition points, wavefront flattening techniques and surge arrester design applications for voltage buildup reduction and control are studied. Polyphase multi-velocity multi-conductor system transients are included. DESIGN ELECTIVE. *Prereq: EECE 012 or equivalent and EECE 121 or equivalent.*

EECE 195. Independent Study 1-4 sem. hrs. Undergraduate independent study project of either a theoretical or experimental nature. *Prereq: Jr. stndg. and 3 MU QPA and cons. of instr. and cons. of dept. ch.*

Also carries graduate credit.

INDUSTRIAL ENGINEERING (INEN)

Chairperson and Professor: Kim
Associate Chairperson and Director of Undergraduate Studies: Fournelle
Director of Graduate Studies: Nigro
Professor Emeritus: Matar
Associate Professor: Cariapa, Marklin, Rice
Assistant Professor: Domblesky
Adjunct Professor: Stilp

INEN 091. Co-op Work Period 1 0 sem. 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 092, 094, etc. Offered every term. Fee.

#INEN 092. Co-op Grading Period 1
 1 sem. 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. Offered every term. No tuition is charged for Grading Periods. S/U grade assessment.*

#INEN 093. Co-op Work Period 2 0 sem. 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 092, 094, etc. Offered every term. Fee.*

#INEN 094. Co-op Grading Period 2
 1 sem. 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. Offered every term. No tuition is charged for Grading Periods. S/U grade assessment.*

#INEN 095. Co-op Work Period 3 0 sem. 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 092, 094, etc. Offered every term. Fee.*

#INEN 096. Co-op Grading Period 3
 1 sem. 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. Offered every term. No tuition is charged for Grading Periods. S/U grade assessment.*

#INEN 097. Co-op Work Period 4 0 sem. 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 092, 094, etc. Offered every term. Fee.*

#INEN 098. Co-op Grading Period 4
 1 sem. 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. Offered every term. No tuition is charged for Grading Periods. S/U grade assessment.*

**A nominal fee is charged for registration for work periods. No tuition is charged for grading periods.*

INEN 120. Engineering Economy 2 sem. 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. Offered every term.

INEN 130. Optimization of Industrial Systems 3 sem. hrs.
 Introduction to deterministic mathematical programming. Topics will include linear programming, duality, transportation problems, assignment problems, integer programming formulation, and goal programming. Offered spring term. *Prereq:* GEEN 022 or equivalent and GEEN 023 or equivalent and INEN 140 or equivalent and MATH 083 or equivalent.

#INEN 131. Industrial Simulation 3 sem. hrs.
 General principles of stochastic simulation. Use of FORTRAN and general purpose simulation languages to simulate integrated systems in manufacturing and service industry such as material handling, production and inventory control, facility layout, and quality control. Offered fall term. *Prereq:* GEEN 022 or equivalent and GEEN 023 or equivalent and INEN 140 or equivalent.

INEN 140. Engineering Statistics 3 sem. hrs.
 This course covers the solution of non-deterministic problems in engineering along with the application of statistics to engineering effort in areas such as design, tolerancing, material selection, process selection, and reliability and quality controls. The course will also cover the application and limitations of inferential statistics in engineering. Offered spring term. *Prereq:* MATH 081.

INEN 143. Manufacturing Engineering 1 3 sem. 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. Offered spring term. 2 hrs. lec., 2 hrs. lab. *Prereq:* MEEN 060.

INEN 144. Manufacturing Engineering 2
 3 sem. hrs.
 The types of systems and procedures which are relevant to the manufacture of products. Manufacturing and assembly systems; robotics; flexible manufacturing cells; system design and control (CAD/CAM); quality control and assurance; design of products for manufacturability. Offered occasionally. 2 hrs. lec., 2 hrs. lab. *Prereq:* INEN 143.

INEN 146. Principles of Design 3 sem. 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). Offered Fall semester. 2 hrs. lec., 2 hrs. lab. *Prereq:* Sr. stndg; Co-op students, junior standing. Cross-listed with BIEN 146, COEN 146, EECE 146 and MEEN 146.

INEN 147. Senior Design Project 3 sem. 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. Offered Spring semester. 2 hrs. lec., 2 hrs. lab. *Prereq:* INEN 146; Cross-listed with BIEN 147, COEN 147, EECE 147 and MEEN 147.

#INEN 148. Design of Engineering Experiments 3 sem. 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 factorial designs. Offered fall term. *Prereq:* INEN 140; or MATH 164; or cons. of instr.

INEN 151. Work Measurement and Workplace Design 3 sem. hrs.
 The major part of this course concentrates on how to quantify work and how to design workplaces, based on measurement and methods engineering, to achieve optimum efficiency. A minor part of this course will discuss methods used to analyze environmental stressors, such as noise and illumination, and the application of these methods in workplace design to reduce operator fatigue and to achieve optimum performance. Offered spring term. 2 hrs. lec., 2 hrs. lab. *Prereq:* MATH 080.

#INEN 159. Topics in Industrial Engineering
 3 sem. hrs.
 Topics include: quality assurance, artificial intelligence, advanced production control methods, ergonomics and non-traditional manufacturing processes. Course content announced each term. Offered occasionally. *Prereq:* Sr. stndg.

#INEN 164. Ergonomics 3 sem. hrs.
 Ergonomics maximizes the health and safety of workers, while maintaining productivity and quality. This course will cover biomechanical and physiologic aspects of workplace design, such as engineering anthropometry, cumulative trauma disorders, (including carpal tunnel syndrome), low back injuries, handtool 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. Offered fall term. 2 hrs. lec., 2 hrs. lab. *Prereq: ENME 022 or equivalent and INEN 140 or equivalent.*

#INEN 165. Stochastic Models in Operations Research 3 sem. hrs.

Introduction to stochastic models in operations research; review of probability theory and statistical inference; introduction to Markov chains; queuing theory and its applications; dynamic programming; inventory theory and its applications; game theory decision analysis. Offered occasionally. *Prereq: INEN 130.*

#INEN 180. Metal Forming 1 3 sem. hrs.

Bulk and sheet forming processes. Elementary plasticity theory, yield criteria, effective stress, strain, instability, and necking. Solutions to metal forming problems using upper and lower bound methods. Anisotropy and formability in metal forming. Offered occasionally. *Prereq: ENME 130 and INEN 143; or ENME 130 and MEEN 143.*

#INEN 185. Welding Engineering 3 sem. hrs.

Arc welding physics, fundamentals of power supplies and welding circuits, fusion and solid-state welding processes, weld testing, analysis of welded joints. Laboratory demonstrations using various processes. Offered occasionally. *Prereq: ENME 130 and INEN 143; or ENME 130 and MEEN 143.*

INEN 190. Engineering Fundamentals

Review 1 sem. hr.

Review of basic science, mathematics, engineering science, and economics. Offered fall term. *Prereq: Sr. stdng; S/U grade assessment.*

INEN 195. Independent Study 1-3 sem. hrs.

Undergraduate independent study project of either a theoretical or experimental nature. Offered every term. *Prereq: Jr. stdng. and 3.0 MU QPA and cons. of instr. and cons. of dept. ch.*

Also carries graduate credit.

MECHANICAL ENGINEERING (MEEN)

Chairperson and Professor: Kim
Associate Chairperson and Director of Undergraduate Studies: Fournelle
Director of Graduate Studies: Nigro
Professor: Brower, Fournelle, Harris, Heinrich, Nigro, Seitz, Widera
Professor Emeriti: Brebrick, Blumenthal, Cartz, Elkouh, Matar, Reid
Associate Professor: Cariapa, Jensen, Marklin, Nagurka, Rice, Schimmels, Stango, Weber
Associate Professor Emeriti: Bradish, Panlener
Assistant Professor: Borg, Domblesky, Madjalani
Adjunct Professor: Bishop, Janc, Stilp
Adjunct Associate Professor: Hoffmann, Toth
Research Associate Professor: Gaggioli, Park
Research Assistant Professor: Huang
Adjunct Assistant Professor: Braun, Schaefer

MEEN 010. Statics 3 sem. hrs.

Fundamentals of forces and force systems. Application to particles and bodies in equilibrium. Emphasizing vector methods in two and three dimensions. Free body diagrams with and

without friction. Centroids and moment of inertia. Offered each term. *Prereq: MATH 081.*

MEEN 020. Dynamics 3 sem. 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. Offered each term. *Prereq: ENME 010.*

MEEN 022. Statics and Dynamics

4 sem. 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. Offered each term. *Prereq: MATH 081.*

MEEN 060. Materials Science 3 sem. 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. Offered every term. *Prereq: CHEM001.*

#MEEN 091. Co-op Work Period 1 0 sem. 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 091S. 092S. etc. Offered every term. Fee.*

#MEEN 092. Co-op Grading Period 1

1 sem. 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. Offered every term. No tuition is charged for Grading Periods. S/U grade assessment.*

#MEEN 093. Co-op Work Period 2 0 sem. 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 091S. 092S. etc. Offered every term. Fee.*

#MEEN 094. Co-op Grading Period 2

1 sem. 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. Offered every term. No tuition is charged for Grading Periods. S/U grade assessment.*

#MEEN 095. Co-op Work Period 3 0 sem. 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 091S. 092S. etc. Offered every term. Fee.*

#MEEN 096. Co-op Grading Period 3

1 sem. 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. Offered every term. No tuition is charged for Grading Periods. S/U grade assessment.*

#MEEN 097. Co-op Work Period 4 0 sem. 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 091S. 092S. etc. Offered every term. Fee.*

#MEEN 098. Co-op Grading Period 4

1 sem. 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. Offered every term. No tuition is charged for Grading Periods. S/U grade assessment.*

MEEN 104. Principles of Thermofluids

3 sem. hrs.

Elementary principles of thermodynamics, fluid flow, and heat transfer, under conditions of constant composition. Applications to turbomachinery, power and refrigeration cycles, piping and duct networks, and heat exchange materials and equipment. Simple experiments including applications of dimensional analysis, are conducted, along with associated design problems. Offered every term. *Prereq: MATH 081 and PHYS 003.*

MEEN 106. Energy Conversion Processes

3 sem. hrs.

Further development of thermofluids principles, including (a) compressible flow—with applications to nozzles, shock, friction (Fanno flow), heat addition (Rayleigh flow), and (b) processes with variable composition, particularly psychrometrics and combustion, and (c) exergy analysis. Applications to combustion turbines, combustion engines, advanced refrigeration and power cycles including heat generation and transfer equipment, combined cycles and cogeneration. Several experiments are carried out for testing the processes, equipment and cycles, and as a basis for associated design problems. Offered spring term. 2 hrs. lec., 2 hrs. lab. *Prereq: MEEN 104.*

MEEN 108. Fundamentals of Heat Transfer

3 sem. hrs.

Principal mechanisms of heat transfer: conduction, convection, and thermal radiation. Applications to heat exchangers and thermal system design. Offered fall term. *Prereq: MATH 083 and MEEN 104.*

#MEEN 111. Applied Energy Conversion

3 sem. hrs.

Principles of modeling processes, devices, and systems. Design of turbomachinery, heat generation, and heat transfer equipment including engines and fuel cells. Offered occasionally.

Prereq: ENME 151 and MEEN 104 and MEEN 108 which must be taken concurrently; or cons. of instr.

#MEEN 117. Heating and Air-conditioning Systems 3 sem. hrs.

Focus on components of heating, ventilating and air conditioning systems, their integration and control. Includes discussion of vapor compression refrigeration cycles, applied psychometrics, heating and cooling loads, pump and fan systems and duct sizing. Student projects involve computerized building energy analysis procedures. Offered occasionally.

Prereq: MEEN 104.

#MEEN 118. Power Plants 3 sem. hrs.

Exposition of how fossil and nuclear energy resources are converted to produce electric power in steam turbine and gas turbine power plants. Included are: cycle analysis, turbine blading, causes of non-ideal compression and expansion, exhaust-end turbine losses, turbine governing. Offered occasionally. *Prereq: ENME 151 and MEEN 104; MEEN 108 must be taken concurrently or consent of instructor.*

#MEEN 119. Topics in Energy Conversion 1-3 sem. hrs.

Contents announced each term. For example, course could be devoted to one of the following subjects: internal combustion engines, direct energy conversion, principles of nuclear engineering, principles of solar engineering, heat exchange equipment, energy storage, cogeneration systems. Offered occasionally.

MEEN 120. Mechanical Measurements and Instrumentation 3 sem. hrs.

Instrumentation systems including transducers, signal conditioners and readout devices. Oscilloscopes, recorders, bridges. Measurement of force, displacement, flow, temperature, pressure and other engineering parameters. Offered fall term. 2 hrs. lec., 2 hrs. lab. *Prereq: MATH 081 and PHYS 004; or EECE 109 and MATH 081.*

MEEN 128. Dynamics of Mechanical Systems 3 sem. 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. Offered spring term. *Prereq: ENME 020 and MATH 083.*

MEEN 130. Mechanics of Materials 3 sem. hrs.

Fundamentals of stress, strain, axial loading, torsion, bending, transverse loading, stress and strain transformations, beam deflections, energy methods, columns. Offered each term. *Prereq: ENME 010.*

MEEN 134. Intermediate Fluid Dynamics 3 sem. hrs.

Ideal fluid flows, one-dimensional compressible flow, including nozzles and propulsive thrust, simple viscous flows, the boundary layer, turbulence. Offered occasionally. *Prereq: ENME 151 or equivalent and MEEN 104 or equivalent.*

MEEN 141. Computer-Aided Engineering 3 sem. 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. Offered fall term. 3 hrs. lec., 1 hr. lab. *Prereq: ENME 130 and MEEN 128.*

MEEN 142. Design of Machine Elements 4 sem. 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. Offered spring term. 3 hrs. lec., 2 hrs. lab. *Prereq: ENME 010 and ENME 130.*

MEEN 143. Manufacturing Engineering 1 3 sem. 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. Offered spring term. 2 hrs. lec., 2 hrs. lab. *Prereq: MEEN 060.*

MEEN 144. Manufacturing Engineering 2 3 sem. hrs.

The types of systems and procedures which are relevant to the manufacture of products. Manufacturing and assembly systems; robotics; flexible manufacturing cells; system design and control (CAD/CAM); quality control and assurance; design of products for manufacturability. Offered occasionally. 2 hrs. lec., 2 hrs. lab. *Prereq: MEEN 143.*

MEEN 146. Principles of Design 3 sem. 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). Offered Fall semester. 2 hrs. lec., 2 hrs. lab. *Prereq: Sr. stndg; Co-op students, junior standing. Cross-listed with BIEN 146, COEN 146, EECE 146, AND INEN 146.*

MEEN 147. Senior Design Project 3 sem. 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. Offered Spring semester. 2 hrs. lec., 2 hrs. lab. *Prereq: MEEN 146; Cross-listed with BIEN 147, COEN 147, EECE 147 and INEN 147.*

#MEEN 148. Design of Engineering Experiments 3 sem. 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. Offered fall term. *Prereq: MATH 164; or INEN 140; or cons. of instr.*

MEEN 149. Mechanics of Fluids 3 sem. 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. Offered each term. *Prereq: ENME 022 and MATH 082; or ENME 020 and MATH 082.*

#MEEN 150. Applied Stress Analysis 1 3 sem. 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. Offered occasionally. *Prereq: ENME 130.*

#MEEN 151. Advanced Design of Machine Elements 3 sem. 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. Offered occasionally. *Prereq: MEEN 142 or equivalent.*

#MEEN 153. Finite Element Method 3 sem. hrs.

Application of finite element method (FEM) to static and dynamic mechanical systems. Introduction to commercially available FEM programs. Offered occasionally. *Prereq: MEEN 141.*

#MEEN 154. Introduction to Polymers and Polymer Composites in Design 3 sem. 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. Offered occasionally. *Prereq: ENME 130.*

#MEEN 155. Fatigue and Fracture in Mechanical Design 3 sem. 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. Offered occasionally. *Prereq: ENME 130.*

#MEEN 156. Optimal Design of Engineering Systems 3 sem. hrs.

Development of math models for optimal design of engineered systems. Development

and use of algorithms for optimization. Linear and non-linear programming. Offered occasionally.

Prereq: MEEN 141 or equivalent.

#MEEN 157. Perturbation Methods in Engineering 3 sem. hrs.

Solution of nonlinear problems in solid and fluid mechanics and dynamics by use of asymptotic perturbation techniques. Asymptotic expansions, regular and singular perturbations and applications in dynamics, celestial mechanics, potential, viscous and compressible flows. Uniformly valid approximations in various physical problems. Generalized boundary-layer techniques. Coordinate straining techniques; Poincare's method. Matched asymptotic expansions and multiple scales. Problems with several time or length scales. Examples taken from various fields of science. Offered occasionally. *Prereq: cons. of instr.*

#MEEN 158. Mechatronics 3 sem. 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 micro-computer/microcontroller, discrete and continuous controller design, and real-time programming for control. Offered occasionally. *Prereq: MEEN 120 and MEEN 128.*

#MEEN 159. Topics in Mechanical Systems Analysis and Design 3 sem. hrs.

Topics may include: vibrations, multi-body dynamics, composite materials, polymers, physical systems modeling, and mechanical analysis of manufacturing processes. Offered occasionally.

MEEN 160. Materials Selection in Mechanical Design 3 sem. 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. Offered fall term. 3 hrs. lec., 3 hrs. lab. *Prereq: MEEN 060.*

#MEEN 161. Failure Analysis 3 sem. 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. Offered occasionally. *Prereq: ENME 130 and MEEN 160.*

#MEEN 163. Powder Metallurgy 1 3 sem. 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. Offered occasionally. *Prereq: MEEN 060.*

#MEEN 164. Powder Metallurgy 2 3 sem. hrs.

This course introduces advanced powder metallurgy processes and products with emphasis on materials like ceramics, cermets, and special alloys. The main topics are special powder production techniques, cold and hot isostatic compaction, full density processing, mechanical properties under special loading conditions. Offered occasionally. *Prereq: MEEN 060 and MEEN 163.*

#MEEN 165. Surface Engineering 3 sem. hrs.

Structure, composition, and thermodynamics of the top several atom layers of solid interfaces and surfaces. Surface analytical techniques in ultra high vacuum. Curved and fractal surfaces, small particle effects in sintering and catalysis. Structure of adsorbed mono layers. Catalyzed surface reactions. Epitaxy in forming semiconductor layer structure. Offered occasionally. *Prereq: MEEN 060.*

#MEEN 166. Principles of Heat Treatment 3 sem. hrs.

Fundamental characteristics of carbon and low alloy steels. Effect of alloy elements on the heat treatment characteristics and mechanical properties of low alloy steels. Heat treatment, microstructure and properties of cast irons, stainless steels, tool steels and heat-resisting alloys. Offered occasionally. *Prereq: MEEN 160; or cons. of instr.*

#MEEN 167. Mechanical Behavior of Materials 3 sem. 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. Offered occasionally. *Prereq: ENME 130 and MEEN 160; or cons. of instr.*

MEEN 168. Processing and Forming of Materials 3 sem. 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. Offered occasionally. *Prereq: MEEN 060.*

#MEEN 170. Introduction to Biomaterials Science and Engineering 3 sem. 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. Offered occasionally. Same as BIEN 170. *Prereq: MEEN 060.*

#MEEN 171. Topics in Materials Engineering 3 sem. hrs.

Different course content each term. Topics include: electron microscopy, biomaterials,

surface treatment of metals and physical ceramics. Offered occasionally.

MEEN 173. Dielectric Properties of Materials 3 sem. hrs.

The principles governing dielectric breakdown and dielectric polarization in materials are explored. These are related to the microscopic and macroscopic nature of materials. Offered occasionally. Same as EECE 161. *Prereq: EECE 012 and EECE 121.*

MEEN 175. Structure-Property Relationship of Biological Materials 3 sem. hrs.

This course is designed to critically review the structure-property relationships of biological materials. Structure-property relationships for skin, bone, pigments, tendons, muscle and organs will be discussed. The effect of pathology, state of the tissue, and age on material properties of tissues and organs will be discussed. This course would also critically review the testing methods used to obtain mechanical behavior of the biological tissues and organs. Offered occasionally. Same as BIEN 175. *Prereq: cons. of instr.*

#MEEN 180. Metal Forming 1 3 sem. hrs.

Bulk and sheet forming processes. Elementary plasticity theory, yield criteria, effective stress, strain, instability and necking. Solutions to metal forming problems using upper and lower bound methods. Anisotropy and formability in metal forming. Offered occasionally. *Prereq: ENME 130 and INEN 143; or ENME 130 and MEEN 143.*

MEEN 190. Engineering Fundamentals Review 1 sem. hr.

Review of basic science, mathematics, engineering science, and economics. Offered fall term. *Prereq: Sr. stdng; Same as CEEN 139. S/U grade assessment.*

MEEN 195. Independent Study 1-3 sem. hrs.

Undergraduate independent study project of either theoretical or experimental nature. Offered every term. *Prereq: Jr. stdng. and 3 MU QPA and cons. of instr. and cons. of dept. ch.*

Also carries graduate credit.

SPECIAL PROGRAM

ENGINEERING ETHICS AND VALUES

ENEV 001. Ethics and Values Colloquium 1 0 sem. hrs.

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 002. Ethics and Values Colloquium 2 0 sem. hrs.

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 003. Ethics and Values Colloquium 3

0 sem. hrs.

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 grading.

ENEV 004. Ethics and Values Colloquium 4

0 sem. hrs.

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 grading.

ENEV 005. Ethics and Values Colloquium 5

0 sem. hrs.

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 grading.

ENEV 006. Ethics and Values Colloquium 6

1 sem. 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 4 to 6 times during the term. S/U grading.

ENEV 007. Ethics and Values Colloquium 7

1 sem. 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 4 to 6 times during the term. S/U grading.

ENEV 008. Ethics and Values Colloquium 8

1 sem. 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 4 to 6 times during the term. S/U grading.

College of Health Sciences

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

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 science, and speech pathology and audiology. Students who successfully complete the honors program may receive an honors bachelor of science in these majors.

The Graduate School confers a master of science in speech-language pathology and a certificate in Bilingual English-Spanish. Details for these programs can be found in the *Graduate Bulletin*.

The college also offers a professional doctoral program in physical therapy and a master's 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 majors in athletic training, biomedical sciences, clinical laboratory science, exercise science, and speech pathology and audiology. Specific requirements and typical four-year programs are listed on the next several pages.

The College of Health Sciences offers two minors, biomedical sciences and speech pathology and audiology.

Students interested in minoring in **speech pathology and audiology** must complete 21 hours of speech pathology and audiology course work including SPPA 010, 031, and 036.

Requirements for a **biomedical sciences** minor are 18 credits selected from the following BISC 006, 007, 110, 112, 113, 115, 120, 125, 126, 135, 145, 150, 160, 165, 180, 195, 198 and CLLS 010. A maximum of nine transfer credits can be awarded toward the requirement for the minor.

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, a resource library, 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 schools of interest to identify specific course requirements.

Students considering the Doctor of Physical Therapy Program must complete prerequisite courses at an accredited four-year educational institution.

PRE-DENTAL SCHOLARS PROGRAM

The Pre-dental Scholars program is an accelerated program which allows students to receive an undergraduate degree with conditional acceptance to Marquette University's School of Dentistry, the only dental school in the state of Wisconsin. Pre-dental scholars complete a bachelors' degree and a dental degree in seven years rather than the eight years normally required.

Pre-dental scholars enroll in the College of Health Sciences, major in biomedical sciences and complete the undergraduate portion of their studies in three years. In the first three years of the pre-dental scholar program, students complete the curriculum and major requirements. Courses taken in the fourth year (first year of dental school) count as requirements towards the bachelors' degree and also toward the completion of their dental degree.

ACADEMIC EXPECTATIONS FOR PRE-DENTAL SCHOLARS

1. Formally register with the assistant dean and/or biomedical sciences faculty designee prior to the first week of classes of the freshmen year.
2. Formally declare a Biomedical Sciences major within the College of Health Sciences.
3. Required to meet with the assistant dean and/or biomedical sciences faculty designee, during each semester's advising period to schedule a course of study for the following semester.
4. Achieve and maintain a minimum cumulative quality point average of 3.500 at the end of their first three years in order to earn admission to the School of Dentistry. Receive a minimum of a 3.00 (B) in any science or mathematics course. Failure to maintain these standards may result in being placed on probation in the program. Two semesters of probation will result in dismissal from the program.
5. May take the Dental Aptitude Test (DAT) as early as the spring semester of the sophomore year but no later than the fall semester of the junior year. Students must achieve at least a score of 15 for the perceptual Motor Abilities Test and at least 15 for the Academic Test.
6. To matriculate to the Dental School during their fourth year at Marquette, any undergraduate scholarships and financial aid will be applicable for only three years. After completing the first three years of undergraduate course work, students must apply for financial aid and scholarships through the dental school.

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 also earn a C or better in all their courses in their major.

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 one term prior to the term of graduation.

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

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.

Students in the professional phase of the Doctorate of Physical Therapy programs **must** comply with the academic regulations listed in the *Physical Therapy Student Handbook*. The *Physical Therapy Student Handbook* is issued to students upon entering the professional phase of the curriculum (fourth year).

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 and academic matters related to their curriculum. It is the student's responsibility to monitor his/her own progress toward degree requirements.

CD AND D GRADES

Students must maintain a cumulative quality point average of at least 2.000. A term quality point falling below 2.000 for two consecutive terms will result in scholastic censure.

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 credits hours for graduation.

Credit is never given twice for the same course. Students who received a grade of CD or D in a course in their major or minor may choose to repeat the course. Please see the repeated courses in the University section of the bulletin.

ABSENCE FROM FINAL EXAMINATIONS

A health science student who misses a final examination in any course must file a written excuse with the college office within 48 hours of the examination. Students with validated excuses may take make-up examinations during the following term at the time designated by the university. Clearance of temporary grades (I, X and IX) in all health sciences courses is administered through the College of Health Sciences office.

S/U 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 an S or U grade 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.

ATTENDANCE

Courses in this college 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 and can result in university censure. When a student is reported to have been excessively absent from class, the penalty of being withdrawn from the class with a grade of "WA" (withdrawal due to excessive absences) may be issued. Individual class offerings in the college may have more stringent policies which are clearly indicated in the syllabus and announced during the first week of class.

APPROVAL FOR SUMMER SESSIONS STUDY

Students who plan to take courses in summer school at another institution are required to obtain the approval from the deans 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.

INDEPENDENT STUDY COURSES

Independent study courses (195) 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 have an overall Q.P.A. of 2.500 and have attained junior standing (60 credits). 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 pro-

posals, the faculty's willingness to accept the proposal and to work with the student for the duration of the course. All 195s must have written approval from the instructor and department chairperson or assistant 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.

APPEALS 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. Normally 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.

Individual programs in the College of Health Sciences may conduct hearing procedures related to academic or clinical deficiencies. An adviser is permitted at these hearings. If an adviser is an attorney, the hearing must be scheduled to allow the presence of Marquette University's legal counsel. An attorney may function as an adviser only and will not play an active role in the hearing or speak on behalf of the student. Since the academic standards hearing is not a legal proceeding, traditional rules of evidence do not apply.

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. Cheating, plagiarism, unapproved collaboration or falsifying work in whole or in part are infractions that can result in failure in the assignment, failure in the course or even dismissal from the college or university. Allegations of clinical misconduct may result in immediate suspension from a clinical practicum. If evidence of academic/clinical dishonesty arises in the college, the student will be notified in writing by the departmental chairperson of the allegations and reasons for possible penalties or dismissal from the program. The chairperson also will notify the Professional Affairs Committee of these allegations and of proposed actions involving the student.

The Committee will investigate and evaluate the case and provide the student with an opportunity for a hearing before the Committee. The departmental chairperson will be present at the hearing. The student may present information to the investigating committee and may bring one person to the hearing to provide support or advice. If this person is an attorney, the student must so notify the chairperson of the Committee no later than three business days prior to the hearing so that university counsel may attend the hearing. If university counsel is unable to attend the hearing as scheduled, the hearing may be rescheduled to permit such attendance. The committee may pose questions to the student, review documentation presented by the student and/or the departmental chairperson and allow third parties to present relevant evidence, all at the sole discretion of the Committee.

The Committee will make its recommendation directly to the dean of the college. The dean shall determine whether academic dishonesty occurred and set the appropriate action or penalty. The dean's decision regarding the appeal shall be transmitted to the student in writing. Any appeal made beyond the college should be directed to the Office of the Provost.

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 069 (lower division) or 169 (upper division) indicate courses that will transfer for which there is no discernable Marquette equivalent. These credits will count toward the degree however, they will not fulfill any requirement where a specific course number (i.e. ENGL 001 or BISC 015) has been indicated. Please contact the college office with any questions or concerns regarding the transfer of credits.

STUDENT ORGANIZATIONS

AMERICAN STUDENT DENTAL ASSOCIATION (ASDA)

The American Student Dental Association is a national professional association that represents students interested in the field of dentistry whether they are exploring a career in dentistry or nearing the end of their professional training. ASDA is devoted to student concerns and the student viewpoint on professional issues in the field of dentistry. ASDA provides opportunities to 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.

BIOMEDICAL SCIENCES ASSOCIATION

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 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 the coordinating instrument for all College of Health Sciences professional and social activities. 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 and the American Society for Clinical Laboratory Science.

ATHLETIC TRAINING/EXERCISE SCIENCE

Students enrolled in exercise science or athletic training are eligible for membership in the Health Sciences Student Council. Students may also be eligible for student membership in the American College of Sports Medicine, National Strength and Conditioning Association, American Society of Exercise Physiologists, National Athletic Trainers Association, and other fitness related organizations.

PHYSICAL THERAPY

Students enrolled in the Department of Physical Therapy are eligible for membership in the Physical Therapy Student Council and are eligible for student membership in the American Physical Therapy Association during the professional phase of the program.

PHYSICIAN ASSISTANTS STUDIES

The Student Association of the American Academy of Physician Assistants has awarded a charter membership to the Department of Physician Assistants Studies at Marquette University. All students in the program participate. The organization coordinates fund raising 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.

SPEECH PATHOLOGY AND AUDIOLOGY

The Marquette University chapter of the National Student Speech-Language-Hearing Association is comprised of undergraduate and graduate students interested in the study of the normal communication process and the diagnosis and treatment of communication disorders.

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.

CURRICULA INFORMATION

DEPARTMENT OF BIOMEDICAL SCIENCES

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. The primary purpose of the major and minor are to provide human-oriented courses in anatomical sciences, biochemistry, nutrition, microbiology, molecular biology, pathology, pharmacology and physiology. The coursework 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:

| <i>Area</i> | <i>Credit hours</i> |
|--|---------------------|
| UCCS and Major Curriculum Requirements | 46-48 |
| Required Cognates | 17-25 |
| Major | 30 |

Core and College Curriculum Requirements:

Diverse Cultures (D) **3 credits**

Any course approved for the university core in this area

Histories of Cultures and Societies (HCS) **6 credits**

Any courses approved for the university core in this area*

Human Nature and Ethics (HNE) **7-9 credits**

PHIL 050, PHIL 104, Medical Ethics*

Individual and Social Behavior (ISB) **6 credits**

PSYC 001 and either SOCI 122, SOCI 125, SOCI 132 or SOCI 133*

Literature and Performing Arts (LPA) **6 credits**

Any courses approved for the university core in this area

At least one course must be a literature course.

Mathematical Reasoning (MR) **3 credits**

Any statistics course approved for the university core

Rhetoric (R) **6 credits**

ENGL 001 and ENGL 002*

Science and Nature (SN) **3 credits**

Any required cognate (see below) that has been approved for inclusion in the university core

Theology (T) **6 credits**

THEO 001 and another course approved for the university core in this area

*Fulfills UCCS and Major Curriculum Requirements

▲ Indicates UCCS courses throughout the bulletin.

Required Cognates:

All students are required to take BIOL 001, BIOL 004, CHEM 001, CHEM 002, organic chemistry (either CHEM 023 and CHEM 024 or BISC 005), and one of the following laboratory science courses: BIOL 090, CLLS 010, PHAS 540, PHTH 525, or BISC 165. Students who are interested in pursuing a professional or graduate education should take the following courses: CHEM 023, CHEM 024, PHYS 001, PHYS 002, BIOL 090, MATH 073.

Major Requirements:

The following seven courses are required: BISC 135 or BISC 130, BISC 145, BISC 115, BISC 120, BISC 150, BISC 160 and biochemistry (either BISC 113, BISC 007, or BIOL 100).

Additional courses must be selected from the following list to reach a total of 30 credits: BISC 105, BISC 110, BISC 112, BISC 125, BISC 126, BISC 136, BISC 165, BISC 180, BISC 195, BISC 198, BIOL 101, BIOL 125, BIOL 126, BIOL 135, BIOL 137, BIOL 155, BIOL 156, BIOL 171, BIOL 185, CLLS 050, CLLS 060, CLLS 160, DENT 417, HEAL 140, PHTH 558, PHTH 555. A maximum of nine transfer credit hours can be applied toward the requirements for a major.

Minor Requirements:

For a biomedical sciences minor, 18 credits are required from the following list: BISC 006, BISC 007, BISC 110, BISC 112, BISC 113, BISC 115, BISC 120, BISC 125, BISC 126, BISC 135, BISC 145, BISC 150, BISC 160, BISC 165, BISC 180, BISC 195, BISC 198, CLLS 010. A maximum of nine transfer credit hours can be applied toward the requirements for a minor.

CURRICULA INFORMATION**TYPICAL PROGRAM FOR BIOMEDICAL SCIENCES MAJOR**

| <i>Freshman</i> | | | |
|------------------------------------|-------------|-------------------------------|-------------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| ENGL 001..... | 3 | ENGL 002..... | 3 |
| CHEM 001..... | 4 | CHEM 002..... | 4 |
| BIOL 001..... | 3 | BIOL 002..... | 3 |
| THEO 001..... | 3 | PSYC 001..... | 3 |
| UCCS (HCS)..... | 3 | UCCS (HCS)..... | 3 |
| | <hr/> 16 | | <hr/> 16 |
| <i>Sophomore</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| UCCS (LPA)..... | 3 | UCCS (LPA)..... | 3 |
| CHEM 023*/BISC 005..... | 4/2 | CHEM 024*/BISC 007**..... | 4/3 |
| BISC 135..... | 4 | PHIL 104..... | 3 |
| PHIL 050..... | 3 | Statistics..... | 3 |
| MATH 073*/elective..... | 3 | Electives..... | 3-6 |
| | <hr/> 17/15 | | <hr/> 16-18 |
| <i>Junior</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| PHYS 001*/elective..... | 4/3 | PHYS 002*/elective..... | 4/3 |
| BISC 115..... | 3 | BISC 145..... | 4 |
| BISC 113*/elective..... | 4/3 | BISC 150..... | 3 |
| Sociology Requirement***..... | 3 | BIOL 090*/Lab Course****..... | 1-3 |
| Elective..... | 3 | Electives..... | 3-6 |
| | <hr/> 15-17 | | <hr/> 14-17 |
| <i>Senior</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| Medical Ethics..... | 1-3 | BISC 120..... | 3 |
| UCCS (DC)..... | 3 | BISC 160..... | 3 |
| Biomedical Sciences Electives..... | 7 | UCCS (T)..... | 3 |
| Elective..... | 3-6 | Electives..... | 7 |
| | <hr/> 16-17 | | <hr/> 16 |

* Courses required for many post-graduate/professional programs

** The biochemistry requirement can be satisfied by either BISC 007 or BIOL 100 in the sophomore year or BISC 113 in the junior year

*** SOCI 122, 125, 132 or 133

**** The laboratory course requirement can be satisfied by either BIOL 090, BISC 165, CLLS 010, PHTH 525 or PHAS 440

BIOMEDICAL SCIENCES MAJOR CURRICULUM FOR PRE-PA STUDENTS

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------|-----------|-----------------|-----------|
| ENGL 001. | 3 | ENGL 002. | 3 |
| CHEM 001. | 4 | CHEM 002. | 4 |
| BIOL 001. | 3 | BIOL 002. | 3 |
| UCCS (HCS). | 3 | UCCS (HCS) | 3 |
| THEO 001. | 3 | PSYC 001. | 3 |
| | <hr/> 16 | | <hr/> 16 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|------------------|-----------|
| UCCS (LPA) | 3 | UCCS (LPA) | 3 |
| CHEM 023. | 4 | CHEM 024. | 4 |
| PHIL 050. | 3 | PHIL 104. | 3 |
| BISC 125. | 4 | UCCS (T). | 3 |
| SOCI 133. | 3 | Statistics. | 3 |
| | <hr/> 17 | | <hr/> 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------|-----------|----------------|-----------|
| BISC 113. | 4 | BISC 145. | 4 |
| BISC 130. | 5 | PHTH 558. | 4 |
| BISC 110. | 3 | BISC 150. | 3 |
| Medical Ethics. | 1 | BISC 410. | 4 |
| PHAS 446. | 2 | BISC 165. | 1 |
| | | BISC 160. | 3 |
| | <hr/> 15 | | <hr/> 19 |

Senior

See PA section of the bulletin

BIOMEDICAL SCIENCES MAJOR CURRICULUM FOR DIRECT ADMIT PHYSICAL THERAPY STUDENTS

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|----------------|-----------|
| BIOL 001 | 3 | BIOL 002 | 3 |
| CHEM 001 | 4 | CHEM 002 | 4 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| THEO 001 | 3 | PSYC 001 | 3 |
| Elective | 3 | Elective | 3 |
| | <hr/> 16 | | <hr/> 16 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------|-------------|------------------|-------------|
| BISC 005 | 2 | BISC 007 | 3 |
| UCCS (HCS) | 3 | UCCS (HCS) | 3 |
| PHIL 050 | 3 | PHTH 001* | 1 |
| UCCS (LPA) | 3 | UCCS (LPA) | 3 |
| Electives | 3-6 | Electives | 4-6 |
| | <hr/> 14-17 | | <hr/> 14-16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|---------------------|-----------|
| PHYS 001 | 4 | PHYS 002 | 4 |
| PHIL 104 | 3 | BISC 145 | 4 |
| BISC 115 | 3 | BISC 150 | 3 |
| UCCS (T) | 3 | Statistics*** | 3 |
| Sociology Requirement** | 3 | BISC elective | 3 |
| | <hr/> 16 | | <hr/> 17 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------|-----------|----------------|-----------|
| PHTH 512 | 3 | PHTH 555 | 3 |
| BISC 130 | 5 | PHTH 528 | 2 |
| PHTH 503 | 3 | PHTH 515 | 3 |
| PHTH 572 | 3 | PHTH 525 | 3 |
| Medical Ethics | 1 | BISC 160 | 3 |
| | <hr/> 15 | BISC 120 | 3 |
| | | | <hr/> 17 |

*Students who are not direct admit PT students are not required to complete PHTH 001

**SOCI 122, 125, 132 or 133

***Any statistics course approved for math requirement of the UCCS

PRE-DENTAL SCHOLARS CURRICULUM BIOMEDICAL SCIENCES MAJOR

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------|-----------|-----------------|-----------|
| ENGL 001. | 3 | ENGL 002. | 3 |
| CHEM 001. | 4 | CHEM 002. | 4 |
| BIOL 001. | 3 | BIOL 002. | 3 |
| UCCS (HCS). | 3 | UCCS (HCS) | 3 |
| THEO 001. | 3 | PSYC 001. | 3 |
| | | BISC 030. | 1 |
| | <hr/> 16 | | <hr/> 17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-----------|------------------|-----------|
| CHEM 023. | 4 | CHEM 024. | 4 |
| PHIL 050. | 3 | PHIL 104. | 3 |
| MATH 073/elective. | 3 | BISC 007. | 3 |
| UCCS (LPA). | 3 | BISC 145. | 4 |
| UCCS (DC). | 3 | UCCS (LPA). | 3 |
| | <hr/> 16 | | <hr/> 17 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------------|-------------|--------------------|-----------|
| Medical Ethics. | 1-3 | BISC 120. | 3 |
| Sociology Requirement*. | 3 | BISC 160. | 3 |
| BIOL 090. | 3 | BISC 150. | 3 |
| UCCS (T). | 3 | Statistics**. | 3 |
| PHYS 001. | 4 | PHYS 002. | 4 |
| | <hr/> 14-16 | | <hr/> 16 |

Year One - Dental Curriculum

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-----------|--------------------|-----------|
| BISC 413. | 4 | DENT 417. | 3 |
| BISC 414. | 4 | BISC 410. | 4 |
| Clinical Curriculum. | TBD | BISC 415/416. | 6 |

*Years Two through Four - Dental Curriculum**Clinical Curriculum TBD*

*SOCI 122, 125, 132 or 133

**Any statistics course approved for the UCCS

DEPARTMENT OF CLINICAL LABORATORY SCIENCE

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, 8410 West Bryn Mawr Ave., Suite 670, Chicago, Ill. 60631. 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 010, CLLS 124, CLLS 127, CLLS 140, CLLS 173 and CLLS 174.

Due to the nature of the content of BIOL 100, BIOL 185, CLLS 124 and CLLS 127, 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. Ordinarily, BIOL 185, CLLS 124, CLLS 127, CLLS 140, CLLS 173 and CLLS 174 must be taken during the year immediately preceding the senior year.

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 data base 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 of Core of Common Studies (UCCS) curriculum is included in the Clinical Laboratory Science (CLS) Core Curriculum requirements.

Core and College Curriculum Requirements:

| | |
|---|---------------------|
| Rhetoric (R) | .6 credits |
| ENGL 001 and ENGL 002 | |
| Mathematical Reasoning (MR) | .3 credits |
| MATH 060 | |
| Diverse Cultures (DC) | .3 credits |
| Any course approved for the university core in this area | |
| Histories of Cultures and Societies (HCS) | .3 credits |
| Any course approved for the university core in this area | |
| Individual and Social Behavior (ISB) | .3 credits |
| Any course approved for the university core in this area | |
| Literature and Performing Arts (LPA) | .3 credits |
| Any course approved for the university core in this area | |
| Science and Nature (SN) | .3 credits |
| BIOL 001 | |
| Human Nature and Ethics (HNE) | .7-9 credits |
| PHIL 050, PHIL 104, Medical Ethics | |
| Theology (T) | .6 credits |
| THEO 001 and another course approved for the university core in this area | |

Requirements for a CLS Major

The Clinical Laboratory Science major consists of a minimum of 37 semester credits. The following courses constitute the Clinical Laboratory Science major:

Required Cognates:

| | |
|----------|-------------------------------|
| BIOL 002 | General Biology (3 credits) |
| BIOL 100 | Biochemistry (3 credits) |
| BIOL 185 | Immunobiology (3 credits) |
| BISC 145 | Physiology (4 credits) |
| CHEM 001 | General Chemistry (4 credits) |
| CHEM 002 | General Chemistry (4 credits) |
| CHEM 023 | Organic Chemistry (4 credits) |
| CHEM 024 | Organic Chemistry (4 credits) |

Major Course Requirements:

| | |
|----------|---|
| CLLS 010 | Concepts in Clinical Lab (3 credits) |
| CLLS 124 | Medical Bacteriology (4 credits) |
| CLLS 127 | Medical Microbiology (4 credits) |
| CLLS 140 | Laboratory Instrumentation (4 credits) |
| CLLS 173 | Analytical and Clinical Chemistry (4 credits) |
| CLLS 174 | Clinical Hematology (4 credits) |
| CLLS 180 | Clinical Education (1 credit) |
| CLLS 181 | Clinical Management (1 credit) |
| CLLS 183 | Clinical Chemistry (6 credits) |
| CLLS 184 | Clinical Hematology (4 credits) |
| CLLS 185 | Clinical Hemostasis (3 credits) |
| CLLS 186 | Clinical Immunohematology (6 credits) |
| CLLS 187 | Clinical Immunology and Serology (2 credits) |
| CLLS 188 | Clinical Microbiology |
| CLLS 189 | Clinical Urinology |

Electives 8-12 credits

Students may choose from any university offerings to earn a total of 8-12 credits. 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 MAJOR

| <i>Freshman</i> | | | |
|-----------------------------|-----------|------------------------------|-------------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| BIOL 001 ¹ | 3 | BIOL 002 ² | 3 |
| CHEM 001 | 4 | CHEM 002 | 4 |
| CLLS 101 | 0 | ENGL 002 | 3 |
| ENGL 001 | 3 | HESC 001 (recommended) | 1 |
| UCCS (ISB) | 3 | MATH 060 | 3 |
| Elective | 3 | Elective | 3 |
| | <hr/> 16 | | <hr/> 16-17 |

| <i>Sophomore</i> | | | |
|----------------------|-----------|-----------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| CHEM 023 | 4 | BIOL 100 ² | 3 |
| CLLS 010 | 3 | CHEM 024 | 4 |
| Medical Ethics | 3 | UCCS (DC) | 3 |
| PHIL 050 | 3 | UCCS (LPA) | 3 |
| THEO 001 | 3 | UCCS (T) | 3 |
| | <hr/> 16 | | <hr/> 16 |

| <i>Junior</i> | | | |
|-----------------------------|-------------|-------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| BIOL 185 ¹ | 3 | BISC 145 ² | 4 |
| CLLS 124 ¹ | 4 | CLLS 127 ^{2,3} | 4 |
| Medical Ethics | 1-3 | CLLS 140 ^{2,3} | 4 |
| PHIL 104 | 3 | CLLS 174 ^{2,3} | 4 |
| Electives | 2-6 | | |
| | <hr/> 13-19 | | <hr/> 16 |

| <i>Summer Session Between Junior and Senior Year</i> | |
|--|---|
| CLLS 179 | 4 |

| <i>Senior⁴</i> | |
|---------------------------|----------|
| CLLS 180 | 1 |
| CLLS 181 | 1 |
| CLLS 183 | 6 |
| CLLS 184 | 4 |
| CLLS 185 | 3 |
| CLLS 186 | 6 |
| CLLS 187 | 2 |
| CLLS 188 | 6 |
| CLLS 189 | 2 |
| | <hr/> 31 |

1 Offered only in the Fall semester of each academic year.

2 Offered only in the Spring semester of each academic year.

3 Must be taken in the semester immediately preceding the clinical phase.

4 The senior year (clinical phase) consists of 38 consecutive weeks usually beginning with Summer Session.

TYPICAL PROGRAM FOR PRE-MEDICAL MAJOR

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|------------------------------|-------------|
| BIOL 001 ¹ | 3 | BIOL 002 ² | 3 |
| CHEM 001 | 4 | CHEM 002 | 4 |
| CLLS 101 | 0 | ENGL 002 | 3 |
| UCCS (DC) | 3 | HESC 001 (recommended) | 1 |
| ENGL 001 | 3 | UCCS (ISB) | 3 |
| UCCS (HCS) | 3 | MATH 060 | 3 |
| | <hr/> 16 | | <hr/> 16-17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|-----------------------------|-----------|
| CHEM 023 | 4 | BIOL 100 ² | 3 |
| CLLS 010 | 3 | CHEM 024 | 4 |
| PHIL 050 | 3 | UCCS (LPA) | 3 |
| PHYS 001 | 4 | PHYS 002 | 3 |
| THEO 001 | 3 | UCCS (T) | 3 |
| | <hr/> 17 | | <hr/> 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-------------|-------------------------------|-----------|
| BIOL 090 | 3 | BISC 145 ² | 4 |
| BIOL 185 ¹ | 3 | CLLS 127 ^{2,3} | 4 |
| CLLS 124 ¹ | 4 | CLLS 140 ^{2,3} | 4 |
| UCCS (HNE) | 1-3 | CLLS 174 ^{2,3} | 4 |
| PHIL 104 | 3 | | |
| | <hr/> 14-16 | | <hr/> 16 |

Summer Session Between Junior and Senior Year

CLLS 173

Senior⁴

| | | | |
|----------------|---|----------------|---|
| CLLS 180 | 1 | CLLS 186 | 6 |
| CLLS 181 | 1 | CLLS 187 | 2 |
| CLLS 183 | 6 | CLLS 188 | 6 |
| CLLS 184 | 4 | CLLS 189 | 2 |
| CLLS 185 | 3 | | |

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1 Offered only in the Fall semester of each academic year.

2 Offered only in the Spring semester of each academic year.

3 Must be taken in the semester immediately preceding the clinical phase.

4 The senior year (clinical phase) consists of 38 consecutive weeks usually beginning with Summer Session.

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 127, CLLS 140, and CLLS 174.

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 002, BIOL 100, BIOL 185, and BISC 145.

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 101) 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 in addition to BIOL 100 and at least 33 credit hours of humanities.
2. Attainment of a cumulative quality 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 quality point average of 2.200 as well as a quality 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 2.000 cumulative quality point average are automatically warned on their grade reports. Their quality 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 quality 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

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 register for 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 quality point average of 2.600 to qualify for this privilege.

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, Dynacare Laboratories, Medical Associates, Moreland Medical Center Laboratory and the Clement J. Zablocki VA Medical Center. All affiliations are located in the Milwaukee area.

DEPARTMENT OF PHYSICAL THERAPY

The field of physical therapy has traditionally included the evaluation and treatment of patients with physical disabilities. Recently the profession has expanded to encompass health promotion with anticipatory treatment and prevention of disease and injury. Physical therapy extends beyond direct treatment of patients, to consultation with other services and community agencies. The team concept of rehabilitation is paramount to the total welfare of the client and the client's family.

Marquette's Department of Physical Therapy provides the student with a post-baccalaureate curriculum for the practice of physical therapy, built on a liberal arts foundation. All students are encouraged to continue their professional development to enhance their skills and knowledge in the practice of physical therapy beyond their entry-level education.

DEGREE OFFERED

Students admitted to the Physical Therapy program are enrolled in a curriculum that culminates in a doctor of physical therapy degree. This is a six-year curriculum for a student admitted at the freshmen level. The student first will earn a baccalaureate degree of his or her choice and then be awarded the Doctor of Physical Therapy (DPT) degree at the end of the professional course work. Students admitted with a bachelor's degree will earn the Doctor of Physical Therapy degree after completing the three-year professional program.

ADMISSION REQUIREMENTS

Students may be admitted to the program as freshman with a guaranteed admission to the professional phase beginning fall of 2007 if the student successfully meets all requirements for advancement. Guaranteed admission cannot be extended if requirements are not successfully completed in the pre-professional phase.

High school applicants to the Department of Physical Therapy are expected to fulfill the general admissions requirements listed in the University section of this bulletin. In addition, the following specific items should be noted for admission to the Department of Physical Therapy:

1. One year of high school chemistry and biology is required. Applicants should include trigonometry among the three required units in mathematics because trigonometry is a prerequisite for Physics 001 and 002 at Marquette.
2. Freshman class enrollment is limited. College entrance exam results, transcripts and the application must be received at Marquette by Dec. 1 of the preceding academic year for which the student is applying.
3. The sequence of courses in the professional phase begins in August of each academic year.

Marquette students who were not admitted as freshmen may apply to transfer into the program. Further details of entrance requirements are available from Marquette's Office of Undergraduate Admissions.

PHYSICAL THERAPY OBSERVATION HOURS POLICY

Currently enrolled Marquette students, who have a healthcare major with a clinical component in their undergraduate coursework, may complete up to 40 hours of the required 80 hours of PT observation as part of their clinical component in their undergraduate major. Clinical hours completed in the undergraduate major must be documented by their undergraduate academic advisor. The remainder of the 80 hours must be completed under the supervision of a physical therapist and documented on one or more of the Marquette clinical hour's assessment and verification forms.

A minimum of 10 spaces will be offered to Marquette pre-physical therapy students (PREP) wishing to transfer into Year Four. To apply for this window of admission, students need to complete at least 12 of the physical therapy prerequisite credits at Marquette University and meet or exceed all requirements for the undergraduate phase. External transfer students with degrees from other institutions are encouraged to apply for entry into the professional phase.

DPT prerequisites courses must be completed at an accredited four-year institution. DPT prerequisites required before admission to the professional phase:

| <i>Area of Study</i> | <i>Credit Hours</i> |
|--|---------------------|
| Biology | 3 |
| Chemistry 1 and 2 | 8 |
| Introduction to Physical Therapy | 1* |
| Physics 1 and 2 | 8 |
| Statistics | 3 |
| <i>Total</i> | <i>23**</i> |

* Waived for accepted transfer students but will need to document proficiency in medical terminology in lieu of Intro to PT Class. Completion of a programmed text and written departmental test in medical terminology would meet this requirement.

**External transfer students will need 12 credits of social sciences and/or humanities in addition to the DPT prerequisites. Three credits of cognitive and motor learning are strongly recommended, but not required.

ACADEMIC REGULATIONS

UNDERGRADUATE PHASE

Students admitted to the DPT Program as freshmen must have achieved a 2.400 or greater cumulative quality point average in the specified science prerequisite professional coursework (23 credits) and have a demonstrated plan to complete their bachelor's degree before the end of the 5th term of the professional phase (years 4, 5, and 6) of the program. Students who complete pre-requisite science credits (biology, chemistry, physics) in summer school need to do so at a four-year institution. Following acceptance into the professional phase of the program, students follow the curriculum as outlined for the three-year professional phase unless prior approval is received from the department chairperson.

PROFESSIONAL PHASE

During the professional phase of the program, failure to meet the academic standards may result in the student being placed on probation or dismissed from the program.

A student is automatically placed on probation if, during the professional phase of the program, a single semester Q.P.A. falls within the range of 2.000 and 2.199 for required courses in the professional phase, and the student does not meet any other criteria for probation as listed below. The average Q.P.A. of the semester that resulted in probation combined with the next academic semester, must be equal to or greater than 2.200.

A student is also subject to academic probation, with Conditions of Probation determined through a probationary hearing, for any of the following circumstances:

- A grade of D or lower is received in a single semester for any required course in the professional phase of the curriculum.
- A U grade is received for any one of the four clinical experiences in the physical therapy curriculum, in the absence of clinical misconduct (see Academic/Clinical Misconduct section);
- Failure to comply with learning objectives set forth in a formal learning contract between a faculty member and the student (See *Physical Therapy Student Handbook*).

A student admitted and beginning the professional phase of the program in 2004 may not extend graduation beyond 2009.

A student is subject to dismissal from the Physical Therapy program, as determined by a dismissal hearing, if any of the following occur:

- If at any point within the professional phase, a semester Q.P.A. falls below a 2.000 for required courses in the professional phase;
- A grade of D or lower is obtained in more than one course in a single semester during the professional phase of the program.
- A U grade is obtained in more than one clinical experience;
- Failure to respond to notification of Academic Probation or notification of Academic Probation conditions within the stipulated time frame;
- Failure to comply with any terms of Academic Probation;
- If a student's performance, while on Academic Probation, does not meet the standards listed in the Academic Probation section.
- The student does not complete the professional phase of the program by 2009.
- Probation and dismissal hearing procedures are outlined in the *Physical Therapy Student Handbook*.

In addition to the above academic standards, the department expects its students to adhere to standards of conduct and professionalism. Professional behavior is vital to the success of every

physical therapist. To assist each student in developing and refining their professional behaviors, the department will utilize the Generic Ability Assessment Tool, the American Physical Therapy Association (APTA) Code of Ethics and the APTA Guide for Professional Conduct throughout the curriculum in evaluating the student's performance. Students demonstrating behaviors inconsistent with the criteria may be given an opportunity to remediate, depending on the severity of the behavior (as outlined in the *Physical Therapy Student Handbook*).

The Department of Physical Therapy will allow only those students who have satisfactorily completed all academic and professional behavior requirements to attend a clinical affiliation. The department reserves the right to deny clinical placement to any student who has not satisfactorily met the requirements printed in the *Physical Therapy Student Handbook*. Cancellation or delay of a clinical experience may result in delayed graduation.

TUITION/FINANCIAL AID FOR PROFESSIONAL PHASE

Students who enter physical therapy as freshmen are considered in the pre-professional phase for Years 1-3, and the DPT professional phase for Years 4-6. Full-time students will be charged normal undergraduate rates of tuition for Years 1-3. Yearly tuition increases modestly in Years 4-6, and pays for the upgraded DPT curriculum. There is no additional tuition payment for summer work. Even though undergraduate students in Year 4 are considered in the professional phase of the program, they may still apply for normal financial aid channels available to Marquette undergraduate students. When physical therapy students complete **either** 134 credit hours, or their undergraduate degree, they can no longer be considered for undergraduate sources of financial aid.

The Department of Physical Therapy has a limited pool of scholarship dollars designated for 6th year students, and has a list of outside scholarship opportunities that may be available to a variety of students in the professional phase of the program to investigate.

ACADEMIC APPEALS PROCESS

Students who are cited for not meeting the academic standards and/or professional behaviors will be notified by certified mail. The appeal process is outlined in the *Physical Therapy Student Handbook*.

ACADEMIC/CLINICAL MISCONDUCT

Upon report of misconduct the student will be notified in writing by the departmental chairperson of the allegations and reasons for possible penalties or dismissal from the program. Findings of misconduct will be determined through a hearing conducted by the Professional Affairs Committee (See *Physical Therapy Student Handbook*). Student misconduct may include, but is not limited to:

- Academic dishonesty including cheating, plagiarism, unapproved collaboration or falsifying work in whole or in part;
- Conduct that constitutes harassment, threats or abuse of, or discrimination against, peers, faculty, patients, or others;
- Provision of physical therapy services, or participation in lab courses, while under the influence of an illegal substance and/or alcohol;
- Breach of patient/client confidentiality;
- Failure, during a clinical experience, to comply with the Policies and Procedures of the clinical facility;
- Failure to comply with the Physical Therapy Practice Act for the state in which a clinical experience is located;
- Failure to comply with the American Physical Therapy Association (APTA) Code of Ethics or the APTA Guide of Professional Conduct (www.apta.org).

EXAMINATIONS

Final examinations are held in all subjects. Mid-term examinations may be given as supplementary evidence of student achievement. A student's grade for each subject is determined by the combined result of class work, course assignments, and examinations.

A student who misses a final examination risks the loss of credit and the possibility of not being able to enroll in subsequent PHTH courses. All such cases will be judged by the departmental chairperson.

GRADE APPEAL

The Department of Physical Therapy follows the College of Health Sciences undergraduate grade appeal guidelines (See Appeal Procedures in the College of Health Sciences section of this bulletin).

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 defibrillator) training is required of all students prior to beginning the fourth year of the DPT program. Continued certification is required to be maintained by the student throughout the DPT curriculum. Failure to maintain current certification may jeopardize enrollment in subsequent PHTH courses and/or clinical assignments. Students should contact their local Heart Association or Red Cross offices.

HEALTH INSURANCE/HEALTH CERTIFICATION

All fifth-year students must present evidence of health insurance coverage to the academic coordinator of clinical education before each clinical assignment can be made. A TB screening and/or chest X-ray, if indicated, will be required of all students before each clinical assignment. Hepatitis B vaccination or waiver is required and students will be required to present evidence of appropriate immunizations and/or have tests to determine immune status. Failure to comply with health insurance/health certification requirements will affect the students ability to continue in the program.

LIABILITY INSURANCE

Even though the university has liability insurance on students while they are in clinical practice situations, some facilities require the student to have an additional liability policy. This type of insurance can be obtained through the insurance company used by the American Physical Therapy Association by student members of the association.

ABSENCES

Students who are ill or anticipate absence for a family emergency must contact the physical therapy office immediately. All students must consult with the instructor of the course(s) missed for makeup if necessary. Absences of two or more weeks during the fourth, fifth or sixth years of the program may be considered as grounds for repeating the entire term.

Anticipated absences from full-time clinic must be approved in advance by the academic coordinator of clinical education, the university, and the center coordinator of clinical education at the clinical site. Unapproved absences are not acceptable and may lead to dismissal from the clinical site. Emergency absences, illness, etc., are circumstances usually considered to be acceptable absences if they are substantiated by the coordinators.

WITHDRAWAL FROM THE PHYSICAL THERAPY PROGRAM

Withdrawal from the program is achieved through a written request submitted to the chairperson of the Department of Physical Therapy. Any student considering withdrawing from the physical therapy program is encouraged to meet with the chairperson of the Department of Physical Therapy or his/her adviser prior to making a final decision.

CURRICULA INFORMATION**DIRECT ADMIT CURRICULA INFORMATION****TYPICAL PROFESSIONAL PROGRAM — PHYSICAL THERAPY DEGREE: DPT***Year Four*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-------------|---------------------------------------|-------------|
| BISC 130 Gross. | 5 | BISC 120 Pharmacology | 3 |
| BIOL 172 Physiology* | 4 | BISC 150 Gen. Pathology | 3 |
| PHTH 503 Patient Management 1 | 3 | PHTH 515 Pathophys & Aging | 3 |
| PHTH 512 Culture and Disability | 3 | PHTH 525 Kinesiology 1. | 3 |
| PHTH 572 Health Policy | 3 | PHTH 528 Tests and measures | 2 |
| Medical Ethics** | 1 | PHTH 555 Lifespan Dev | 3 |
| | | Medical Ethics** | 1 |
| | <hr/> 14-19 | | <hr/> 17-18 |

Summer Session

| | SEM. HRS. |
|--|-----------|
| PHTH 507 Patient Management 2 | 2 |
| PHTH 509 Differential Diagnosis of Disease | 2 |
| PHTH 510 Physical Technologies/Elec | 4 |
| PHTH 519 Diagnostic Imaging & Testing | 3 |
| PHTH 522 EB Decision Making | 2 |
| | <hr/> 13 |

Year 5

| FALL TERM (12+4) | SEM. HRS. | SPRING TERM | SEM. HRS. |
|---|-------------|---|-----------|
| SEE HEALTH SCIENCES PROFESSIONAL CALENDAR | | | |
| PHTH 518 Phys of Activity or EXSC 192 | 3-4 | PHTH 552 Orthopedics | 4 |
| PHTH 523 EB Decision Making 2 | 1 | PHTH 558 Neuroanatomy. | 4 |
| PHTH 511 PT Management 3 | 2 | PHTH 570 Advanced Kinesiology. | 4 |
| PHTH 532 Orthopedics 1. | 4 | PHTH 577 Wound Man./Integ PT. | 3 |
| PHTH 545 Kinesiology 2 | 3 | PHTH 560 Integ. Med. Neuroscienc. | 2 |
| PHTH 536 Clinical 1 | 4 | PHTH 564 EB Decision Making 3. | 1 |
| | <hr/> 17-18 | | <hr/> 18 |

Summer Session

| | |
|-------------------------------|--------------|
| PHTH 565 Clinical 2 | 10 Sem. hrs. |
|-------------------------------|--------------|

Year 6

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-------------|------------------------------|-----------|
| PHTH 568 Neurological Rehabilitation | 4 | PHTH 585 Clinical 3. | 8 |
| PHTH 575 Pediatric Disorders/Interv. Strat | 4 | PHTH 586 Clinical 4. | 8 |
| PHTH 582 Cardiovascular & Pulmonary PT. | 3 | | |
| PHTH 584 Clinical Seminar. | 1 | | |
| PHTH 574 EB Decision Making 4 | 1 | | |
| PHTH 598 Advanced electives | 2-4 | | |
| | <hr/> 15-17 | | <hr/> 16 |

* BIOL 172 is required for Human Biology majors. BISC 145 may be taken in the spring of the DPT-third year by physical therapy students in other majors in lieu of BIOL 172.

** Students completing an undergraduate major in the College of Health Sciences must take PHIL 193 during or before the 4th year in order to meet the college requirement of 7 credits of PHIL. Students in other colleges who have met the medical ethics requirement prior to year 4 by taking PHIL 191 or THEO 175 may not need medical ethics in year 4.

*** BISC majors take BISC 160 during the 4th year and BISC 150 during the junior year.

NOTE: Arts and Sciences majors should contact the Physical Therapy Department as soon as possible to ensure proper course placement prior to year 4.

Physical Therapy Credits — 107-111
 External Components Credits — 15
 Total Credits — 122-126

ATHLETIC TRAINING

ATHLETIC TRAINING

Athletic training is an allied health profession whose mission is to enhance the quality of health care for the physically 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 National Athletic Training Association (NATA) required cognates. Entrance into the athletic training major is limited to ensure a wide variety of practical experiences with expert supervision. Applicants must meet admission and retention criteria available in the Exercise Science/Athletic Training office or posted at www.marquette.edu/chs/es.

DEGREE OFFERED

Marquette University confers the degree bachelor of science with a major in athletic training on those students who have satisfactorily completed the required curricula.

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 advisor 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 ATTR degree, 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.

ACCREDITATION

The athletic training major has been granted candidacy status through the Joint Review Committee on Educational Programs in Athletic Training (JRCAT).

Once program accreditation is granted, 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

Students interested in admission to the athletic training major must fulfill admission requirements listed in the University section of the Undergraduate Bulletin. The recommended high school preparation includes three years of math, general chemistry and biology.

Students wishing to pursue athletic training need to be aware of the significant time commitments involved. Advanced standing athletic training (ATTR) students (juniors and seniors) are required to travel with teams to athletic competitions as part of their educational training. Acceptance to the program requires students to read and sign a contract specifically stating these requirements and an acknowledgement of technical standards. For further information see: www.marquette.edu/chs/es.

Retention in ATTR requires compliance with the retention standards listed in the student handbook which is provided to each student upon acceptance into the Athletic Training major. Freshman must complete a minimum of 30 hours of observation in the Weingart Athletic Treatment Center during their first term. These hours must be arranged with the Clinical Instructor Educator (CIE).

Student athletic trainers are given the opportunity to and must be able to travel with teams and, with instructor approval, miss classes as athletes do (these will be excused absences).

They assist with athletic events on weekends and holidays, even when school is not in session as arranged as part of clinical course work.

They must enroll in Clinical Competency Courses ATTR 107, 108, 120, 121, and 188 as described in the curricula, understanding that these courses require a minimum of 10 hours/week of supervised clinical experience outside of formal class time.

They must also become familiar with and honor the Student Athletic Trainers Code of Ethics as described in the student handbook.

PROFESSIONAL CONDUCT AND ACADEMIC REGULATIONS

The program in athletic training expects its student to adhere to standards of conduct and professionalism 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, students in Athletic Training are regularly evaluated during the Clinical

Competency courses and Athletic Training Practicum. Violations and/or major deficiencies may prevent students from receiving clinical assignments and may be grounds for academic probation dismissal.

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 possible academic probation or dismissal from the program as described in the handbook. They must earn a minimum cumulative Q.P.A. 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 designated major courses. Major courses completed with a CD or less do not count toward the total hour requirements for graduation and must be repeated prior to advancing in course sequence as described in the College of Health Sciences graduation requirements.

The department will only allow those students that 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.

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 syllabi. A student who misses a final examination in an ATTR or other course risks the loss of credit and the possibility of not being able to enroll in subsequent ATTR and/or EXSC courses. The instructor and program director who has jurisdiction over the student will judge all such cases. 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 director judge that the absence was warranted, 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 EXSC 010. Continued certification is required to be maintained by and is the responsibility of the student. Failure to maintain current certification may jeopardize enrollment in subsequent ATTR and/or EXSC courses and clinical/practicum assignments.

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.

GRADUATION REQUIREMENTS

Candidates for a baccalaureate degree must complete the following for each major:

ATHLETIC TRAINING (ATTR)

Total minimum of 128 credit hours including the following requirements:

| Area | Credit Hours |
|-------------------|--------------|
| UCCS Requirements | 38 |
| Required Cognates | 16 |
| Major | 74 |
| | <hr/> 128 |

ATHLETIC TRAINING & DPT (ATTR/DPT)

Minimum of 128 credit hours (Plus DPT coursework) including the following requirements:

| Area | Credit Hours |
|-------------------|--------------|
| UCCS Requirements | 38 |
| Required Cognates | 25 |
| Major | 66 |

UCCS AND COLLEGE CURRICULUM REQUIREMENTS

(Please refer to University Common Core of Studies (UCCS) for courses that will meet requirements if not specified below.)

Rhetoric (R) 6 credits

ENGL 001 and ENGL 002*

Mathematical Reasoning (MR) 3 credits

Any approved UCCS statistics course

Diverse Cultures (DC) 3 credits

HEAL 025 plus for DPT students: PHTH

Histories of Cultures and Societies (HCS) . . . 3 credits

Any approved UCCS course

Individual and Social Behavior (ISB) 3 credits

PSYC 001.

Human Nature and Ethics (HNE) 7 credits

PHIL 050, PHIL 104, Medical Ethics 1-3 credits.

Literature and Performing Arts (MR) 3 credits

Any approved UCCS course

Science & Nature (SN) 4 credits

CHEM 001

Theology (T) 6 credits

THEO 001 plus any approved UCCS course.

REQUIRED COGNATES

All students are required to complete BIOL 001, BIOL 002, BISC 110, BISC 120, CHEM 001, CHEM 002. ATTR/DPT students are also required to complete PHYS 001, PHYS 002 and PHTH 001.

MAJOR REQUIREMENTS

The following courses are major requirements that must be completed with a C grade or better (see the Academic Performance section): BISC 015 and all ATTR and EXSC courses listed in the curriculum, with the exception of independent study or special topic courses (ATTR 195, ATTR 198, EXSC 195 and EXSC 198).

TYPICAL ACADEMIC PROGRAM FOR ATHLETIC TRAINING MAJOR

| <i>Freshman Year</i> | | | |
|--|-----------|----------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| ENGL 001* | 3 | ENGL 002* | 3 |
| UCCS (HCS)* | 3 | HEAL 025* | 3 |
| CHEM 001* | 4 | CHEM 002** | 4 |
| EXSC 010 | 2 | BISC 015** | 5 |
| EXSC 090 | 2 | ATTR 020 | 2 |
| THEO 001* | 3 | EXSC 050 | 1 |
| | <hr/> 17 | | <hr/> 18 |
| <i>Sophomore Year</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| EXSC 115 | 5 | BIOL 002** | 3 |
| PSYC 001* | 3 | EXSC 106 | 3 |
| PHIL 050* | 3 | EXSC 110 | 4 |
| BIOL 001** | 3 | ATTR 140 | 3 |
| ATTR 130 | 3 | ATTR 150 | 2 |
| ATTR 107 | 1 | ATTR 108 | 1 |
| | <hr/> 18 | | <hr/> 16 |
| <i>Junior Year</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| ATTR 160 | 2 | ATTR 170 | 3 |
| ATTR 120 | 1 | EXSC 180 | 4 |
| EXSC 190 | 3 | ATTR 121 | 1 |
| UCCS (MR—statistics course)* | 3 | PHIL 104* | 3 |
| UCCS (LPA)* | 3 | BISC 120** | 3 |
| BISC 110** | 3 | EXSC 189 | 3 |
| | <hr/> 15 | | <hr/> 17 |
| <i>Senior Year</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| EXSC 187 | 3 | ATTR 189 | 14-16 |
| Medical Ethics* | 1 | | |
| EXSC 170 | 3 | | |
| UCCS (T)* | 3 | | |
| ATTR 188 | 1 | | |
| ATTR 196 | 2 | | |
| | <hr/> 13 | | <hr/> 14 |

Total Credits Minimum — 128

* Fulfills UCCS and program requirements.

** Required cognates (Major courses are listed with an ATTR or EXSC prefix.)

**TYPICAL ACADEMIC PROGRAM FOR ATHLETIC TRAINING MAJOR
AND DIRECT ADMIT DPT**

Freshman Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|---------------|-----------|
| ENGL 001..... | 3 | ENGL 002..... | 3 |
| UCCS (HCS)..... | 3 | HEAL 025..... | 3 |
| CHEM 001..... | 4 | CHEM 002..... | 4 |
| EXSC 010..... | 2 | BISC 015..... | 5 |
| EXSC 090..... | 2 | ATTR 020..... | 2 |
| THEO 001..... | 3 | EXSC 050..... | 1 |
| | <hr/> 17 | | <hr/> 18 |

Summer

PHIL 050 (HNE) and UCCS (LPA) 6

Sophomore Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------|-----------|---------------|-----------|
| EXSC 115..... | 5 | BIOL 002..... | 3 |
| PSYC 001..... | 3 | EXSC 106..... | 3 |
| PHIL 104 (HNE)..... | 3 | EXSC 110..... | 4 |
| BIOL 001..... | 3 | ATTR 140..... | 3 |
| ATTR 130..... | 3 | ATTR 150..... | 2 |
| ATTR 107..... | 1 | ATTR 108..... | 1 |
| | | PHTH 001..... | 1 |
| | <hr/> 18 | | <hr/> 17 |

Summer

UCCS (T) 3

Junior Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------------------|-----------|---------------|-----------|
| ATTR 160..... | 2 | ATTR 170..... | 3 |
| ATTR 120..... | 1 | EXSC 180..... | 4 |
| EXSC 190..... | 3 | ATTR 121..... | 1 |
| UCCS (MR—statistics course)..... | 3 | BISC 120..... | 3 |
| BISC 110..... | 3 | EXSC 189..... | 3 |
| PHYS 001..... | 4 | PHYS 002..... | 4 |
| | <hr/> 16 | | <hr/> 18 |

Senior Year

| FIRST TERM | CREDITS | SECOND TERM | CREDITS |
|------------------------------|----------|------------------------------|----------|
| Medical Ethics (HNE)..... | 1 | ATTR 188..... | 3 |
| PHTH 572 (for EXSC 170)..... | 3 | BISC 150..... | 3 |
| BIOL 172*..... | 3 | PHTH 515 (for EXSC 187)..... | 3 |
| BISC 130..... | 5 | PHTH 528..... | 2 |
| PHTH 503..... | 3 | PHTH 525..... | 3 |
| PHTH 512..... | 3 | PHTH 555..... | 3 |
| | <hr/> 18 | | <hr/> 17 |

Summer Session

| MODULE 1 | | MODULE 2 | |
|------------------------------|---------|---------------|---------|
| PHAS 444..... | 2 | PHTH 510..... | 4 |
| PHTH 507 (for EXSC 186)..... | 2 | PHTH 522..... | 2 |
| PHTH 519..... | 3 | | |
| | <hr/> 7 | | <hr/> 6 |

DPT 5 Year

| | | |
|-------------------------------|---------|--|
| Fall Term..... | Credits | |
| PH 518 (for EXSC 192) | 3 | |
| PHTH 523..... | 1 | |
| PHTH 511..... | 2 | |
| PHTH 532..... | 4 | |
| PHTH 545..... | 3 | |
| PHTH 536 (for EXSC 186) | 4 | |
| | 17 | |

TOTAL CREDITS MINIMUM:

128

*or BISC 145 (offered Spring term only)

For completion of the EXSC major in December of DPT 5 YEAR

Within the DPT curriculum, ATTR/DPT students must satisfactorily complete all courses that substitute for ATTR requirements (listed in parenthesis).

EXERCISE SCIENCE

The Marquette University Exercise Science program 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 professional with the skills and academic background to pursue a career in the rapidly growing health and fitness industry. The demand for qualified fitness professionals is expanding as total health and fitness awareness increases. Students may pursue careers in community health, corporate wellness, strength and conditioning, sports management, research, cardiac rehabilitation and fitness. Employment opportunities may include positions with fitness/sports centers, private fitness consulting firms, hospital-based programs, health maintenance organizations, corporate or private fitness programs and YMCA and YWCAs. Students may pursue graduate work, professional education, physical therapy, sports medicine, occupational therapy, anatomy, kinesiology, exercise physiology, biomechanics, or related areas. Select students may combine the major with a recommend sequence of courses to prepare for the admission to the clinical doctorate in physical therapy (DPT).

DEGREE OFFERED

Marquette University confers the degree bachelor of science with a major in exercise science on those students who have satisfactorily completed the required curricula.

EXERCISE SCIENCE 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 EXSC. Students that are either direct admit students or intend on applying to the DPT program must meet with a PT advisor 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 EXSC degree, 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.

ADMISSIONS REQUIREMENTS

Applicants to the College of Health Sciences with a major in exercise science are expected to fulfill the admission requirements listed in the University section of the Undergraduate Bulletin. The recommended high school preparation includes three years of high school math. If applicants do not meet the minimum requirement, they must complete one course of college-level math.

Retention in the exercise science major requires compliance with all items listed in this bulletin as well as those described in the student handbook.

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 2005.

The Exercise Science 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.

Preliminary work is also underway with the American College of Sports Medicine to establish a "University Partnership" with the Exercise Science Program.

ACADEMIC PERFORMANCE

Candidates for a degree must earn at least the minimum number of credits listed in their curriculum and a minimum Q.P.A. of 2.0. All students must comply with the College of Health Sciences graduation requirements. 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 requirements and must be repeated prior to advancing in course sequence as described in the College of Health Sciences graduation requirements.

Students in the exercise science major are expected to comply with the academic requirements and regulations listed in the University and College of Health Sciences section of this Bulletin. 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. Students must have current CPR/AED certification; and meet technical and professional standards to remain in the program. Failure to meet all of the academic, technical and professional requirements will result in dismissal from the program.

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 syllabi. A student who misses a final examination in an EXSC or other course risks the loss of credit and the possibility of not being able to enroll in subsequent EXSC courses. The instructor and program director who has jurisdiction over the student will judge all such cases. 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 director judge that the absence was warranted, 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 EXSC 010. Continued certification is required to be maintained by and is the responsibility of the student. Failure to maintain current certification may jeopardize enrollment in subsequent ATTR and/or EXSC courses and clinical/practicum assignments.

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.

GRADUATION REQUIREMENTS

Candidates for a baccalaureate degree must complete the following for each major:

EXERCISE SCIENCE (EXSC)

Minimum of 128 credit hours including the following requirements:

| <i>Area</i> | <i>Credit Hours</i> |
|-------------------|---------------------|
| UCCS Requirements | 38 |
| Required Cognates | 18 |
| Major | 58-60 |
| Electives | 14 |

EXERCISE SCIENCE & DPT (EXSC/DPT)

Minimum of 142 credit hours (Plus DPT coursework) including the following requirements:

| <i>Area</i> | <i>Credit Hours</i> |
|---|---------------------|
| UCCS Requirements | 38 |
| Required Cognates | 29 |
| Major | 52 |
| DPT or other courses (not included above) | 14 |

MAJOR REQUIREMENTS

In addition to the UCCS course requirements, the program's curriculum includes the requirements listed on the curriculum for each major. A curricula has been developed to accommodate the prerequisites for entrance into the DPT while meeting the required course work for the exercise science 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 matriculation.

Curricula have also been developed for those students interested in using Exercise Science 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.

UCCS AND COLLEGE CURRICULUM REQUIREMENTS

(Please refer to University Common Core of Studies (UCCS) for courses that will meet requirements if not specified below.)

Rhetoric (R) 6 credits

ENGL 001 and ENGL 002*

Mathematical Reasoning (MR). 3 credits

Any approved UCCS statistics course

Diverse Cultures (DC) 3 credits

HEAL 025

Histories of Cultures and Societies (HCS). . . 3 credits

Any approved UCCS course

Individual and Social Behavior (ISB) 3 credits

PSYC 001.

Human Nature and Ethics (HNE). 7-9 credits

PHIL 050, PHIL 104, Medical Ethics 1-3 credits.

Literature and Performing Arts (MR) 3 credits

Any approved UCCS course

Science & Nature (SN) 4 credits

CHEM 001

Theology (T) 6 credits

THEO 001 plus any approved UCCS course.

TYPICAL ACADEMIC PROGRAM FOR EXERCISE SCIENCE MAJOR

| <i>Freshman Year</i> | | | |
|----------------------------|-----------|----------------------|-------------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| ENGL 001 (R) | 3 | ENGL 002 (R) | 3 |
| CHEM 001 (SN) | 4 | HEAL 025 (OC) | 3 |
| EXSC 010 | 2 | CHEM 002 | 4 |
| EXSC 090 | 2 | BISC 015 | 5 |
| THEO 001 (T) | 3 | PHTH 001 | 1 |
| UCCS (HCS) | 3 | EXSC 050 | 1 |
| | <hr/> 17 | | <hr/> 17 |
| <i>Sophomore Year</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| EXSC 115 | 5 | PHIL 104 (HNE) | 3 |
| PSYC 001 (ISB) | 3 | EXSC 106 | 3 |
| PHIL 050 (HNE) | 3 | EXSC 110 | 4 |
| BIOL 001 | 3 | PSYC 060 (MR) | 3 |
| UCCS (LPA) | 3 | BIOL 002 | 3 |
| | <hr/> 17 | | <hr/> 16 |
| <i>Junior Year</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| EXSC 100 | 3 | EXSC 180 | 3 |
| EXSC 105 | 2 | EXSC Elective | 1-3 |
| EXSC 190 | 3 | EXSC 189 | 2 |
| UCCS (LPA)* | 3 | Elective | 3 |
| BISC 110 | 3 | UCCS (T) | 3 |
| Elective | 3 | | |
| | <hr/> 17 | | <hr/> 14-16 |
| <i>Senior Year</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| Medical Ethics (HNE) | 1 | EXSC 186 | 14-16 |
| EXSC 170 | 3 | | |
| EXSC 187 | 3 | | |
| EXSC 192 | 4 | | |
| Electives | 5 | | |
| | <hr/> 16 | | |

* Minimum of 2 credits of advanced exercise science electives required

Total credits minimum — 128

REQUIRED COGNATES

All students are required to complete BIOL 001, BIOL 002, BISC 110 and CHEM 002. In addition to these required cognates, students not entering the DPT program, also need to complete a minimum of 2 credits of EXSC electives and 14 credits of general electives. Students that are entering the DPT program, need to complete 1 credit of EXSC elective.

MAJOR REQUIREMENTS

The following courses are major requirements that must be completed with a C grade or better (see the Academic Performance section): BISC 015 and all EXSC courses listed in the curriculum, with the exception of independent study or special topic course (EXSC 195 and EXSC 198).

TYPICAL PROGRAM FOR EXERCISE SCIENCE MAJOR AND DIRECT ADMIT DPT

| <i>Freshman Year</i> | | | |
|-------------------------------|-----------|-------------------------------|-------------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| ENGL 001 (R) | 3 | ENGL 002 | 3 |
| CHEM 001 (SN) | 4 | HEAL 025 | 3 |
| EXSC 010 | 2 | CHEM 002 | 4 |
| EXSC 090 | 2 | BISC 015 | 5 |
| THEO 001 (T) | 3 | PHTH 001 | 1 |
| UCCS (HCS) | 3 | EXSC 050 | 1 |
| | <hr/> 17 | | <hr/> 17 |
| <i>Sophomore Year</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| EXSC 115 | 5 | PHIL 104 (HNE) | 3 |
| PSYC 001 (ISB) | 3 | EXSC 106 | 3 |
| PHIL 050 (HSN) | 3 | EXSC 110 | 4 |
| BIOL 001 | 3 | PSYC 060 (MR) | 3 |
| UCCS (LPA) | 3 | BIOL 002 | 4 |
| | <hr/> 17 | | <hr/> 16 |
| <i>Junior Year</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| EXSC 100 | 3 | EXSC 180 | 4 |
| EXSC 190 | 2 | EXSC elective | 1-3 |
| EXSC 105 | 3 | EXSC 189 | 3 |
| BISC 110 | 3 | PHYS 002 | 4 |
| PHYS 001 | 4 | UCCS (T) | 3 |
| | <hr/> 15 | | <hr/> 15-17 |
| <i>Senior Year/DPT4 Year</i> | | | |
| FIRST TERM | CREDITS | SECOND TERM | CREDITS |
| Medical Ethics (HNE) | 1 | BISC 120 | 3 |
| PHTH 572 (for EXSC 170) | 3 | BISC 150 | 3 |
| BIOL 172* | 3 | PHTH 515 (for EXSC 187) | 3 |
| BISC 130 | 5 | PHTH 528 | 2 |
| PHTH 503 | 3 | PHTH 525 | 3 |
| PHTH 512 | 3 | PHTH 555 | 3 |
| | <hr/> 18 | | <hr/> 17 |
| <i>Summer Session</i> | | | |
| PHAS 444 | 2 | PHTH 510 | 4 |
| PHTH 507 (FOR EXSC 189) | 2 | PHTH 522 | 2 |
| PHTH 519 | 3 | | |
| | <hr/> 7 | | <hr/> 6 |
| <i>DPT5 Year</i> | | | |
| FALL TERM | | | |
| PHTH 518 (for EXSC 192) | 3 | | |
| PHTH 523 | 1 | | |
| PHTH 511 | 2 | | |
| PHTH 532 | 4 | | |
| PHTH 545 | 3 | | |
| PHTH 536 (for EXSC 186) | 4 | | |
| | <hr/> 17 | | |

Minimum Total Credits — 128

*or BISC 145 (offered Spring term only)

For completion of the EXSC major in December of DPT 5 Year: Within the DPT curriculum, EXSC/DPT students must satisfactorily complete all courses that substitute for ATTR requirements (listed in parenthesis).

Students must also have an additional **14** credits of coursework, within the DPT curriculum or elsewhere, to satisfy the total credits required for the EXSC major.

DEPARTMENT OF PHYSICIAN ASSISTANT STUDIES

The College of Health Sciences and the Department of Physician Assistant Studies are dedicated to preparing students for careers as physician assistants by educating them in the Jesuit tradition of *cura personalis*, where academic preparation is coupled to the spiritual, emotional and physical development of the students as they dedicate themselves to service to others. Academic experiences include the humanities, sciences and clinical medicine which prepare the students for the supervised practice of primary medicine within dynamic health care systems.

EDUCATIONAL GOALS

These goals prepare each student intellectually, socially, effectively, and spiritually:

- To thoroughly interview and examine patients, order appropriate tests, assess their findings, and collaborate with the supervising physician, and whenever possible the patient, in determining the appropriate treatment plan.
- To be effective communicators, listeners, observers and diagnosticians.
- To recognize the importance of supporting counseling, educating, and motivating patients and their significant others to take responsibility for their own physical, mental and spiritual health.
- To respect patients and clients from diverse backgrounds.
- To foster the physician assistant and supervising physician relationship.
- To identify true emergencies and respond appropriately.
- To be a responsive and committed member of the health care team and the team concept of health care delivery.
- To develop a commitment to life-long learning.
- To acquire an allegiance to the profession by organization participation.
- To participate in physician assistant training through involvement in the education of physician assistant students.

ADMISSION REQUIREMENT

Students apply for admittance into the Physician Assistant Studies program at the completion of the fall term of their sophomore year. They are required to follow the two-year Preprofessional Phase of the Physician Assistant Studies program and be enrolled in the College of Health Sciences to ensure that they have completed the appropriate prerequisite courses that will make them eligible for a degree in biomedical sciences at the end of the fourth year. Following acceptance into the program, students follow the curriculum as outlined for the three-year Professional phase.

The intensity of the program and the skills necessary for practice as a physician assistant require the program to seek applicants with an excellent academic background, along with strong interpersonal skills and maturity. Prior healthcare experience is also an indicator of a career commitment to clinical practice. The program's admission process will consider each applicant's strengths and select for admission applicants best qualified to meet the program's mission.

Selection factors considered in the admission process include the following:

1. Academic preparation and Q.P.A.
2. Motivation, maturity, ability to work with people, and suitability for clinical practice
3. Five hundred contact hours healthcare and other work experience
4. Knowledge of the PA profession and the profession's role in the healthcare system
5. Graduate Record Exam or SAT/ACT scores
6. Three letters of recommendation
7. Personal interviews
8. Critical Thinking Exam (administered at interview)

RETENTION POLICY

Students in the pre-professional years in the Physician Assistant Program are subject to the general probation-drop policies at Marquette University.

Students enrolled in the professional program must earn a minimum overall Q.P.A. of 2.75 and earn no single course grade below C. Professional students unable to meet this requirement will be placed on a **one term academic probation** and require to obtain a 2.75 cumulative Q.P.A., with no single course grade lower than a C, the following term. If at the end of the following term the overall quality point is above or equal to 2.75 the academic probation is dropped. If the student is unsuccessful at obtaining a minimum cumulative Q.P.A. of 2.75 and no single grade below C the following term the student will be dismissed from the program at the close of that term.

Students earning a final grade of CD, D or F **in a professional phase course** may be dismissed from the program.

Students may not participate in Physician Assistant Preceptorships until they have completed all the required courses in the didactic professional curriculum.

TUITION/FINANCIAL AID FOR PROFESSIONAL PHASE

Students enrolled in the Physician Assistant Studies Program upon completion of their baccalaureate degree will be moved into the professional division of Health Sciences and will no longer be eligible for undergraduate financial aid.

CURRICULA INFORMATION

TWO-YEAR PREPROFESSIONAL PHASE FOR PHYSICIAN ASSISTANT PROGRAM

| <i>First Year</i> | | | |
|--------------------|-----------|----------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| ENGL 001. | 3 | ENGL 002. | 3 |
| CHEM 001. | 4 | CHEM 002. | 4 |
| BIOL 001. | 3 | BIOL 004. | 3 |
| UCCS (HCS). | 3 | UCCS (HCS). | 3 |
| THEO 001 (T). | 3 | PSYC 001. | 3 |
| | <hr/> 16 | | <hr/> 16 |
| <i>Second Year</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| UCCS (LPA). | 3 | UCCS (LPA). | 3 |
| CHEM 023. | 4 | CHEM 024. | 4 |
| PHIL 050. | 3 | UCCS (T). | 3 |
| BISC 125. | 4 | PHIL 104 (HNE). | 3 |
| SOCI 133. | 3 | Statistics. | 3 |
| | <hr/> 17 | | <hr/> 16 |

THREE-YEAR PROFESSIONAL PHASE

| <i>Third Year</i> | | | |
|-------------------|-----------|----------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| BISC 110. | 3 | BISC 145. | 4 |
| BISC 130. | 5 | BISC 150. | 3 |
| BISC 113. | 4 | BISC 160. | 3 |
| PHAS 418. | 1 | BISC 165. | 1 |
| PHAS 446. | 3 | BISC 410. | 4 |
| PHAS 417. | 2 | PHTH 558. | 4 |
| | <hr/> 18 | | <hr/> 19 |

Summer Session between third and fourth year

| | |
|----------------|----------|
| PHAS 405. | 4 |
| PHAS 408. | 2 |
| PHAS 440. | 3 |
| PHAS 445. | 2 |
| | <hr/> 11 |

| <i>Fourth Year</i> | | | |
|--------------------|-----------|----------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| BISC 435. | 4 | PHAS 411. | 5 |
| PHAS 410. | 5 | PHAS 421. | 1 |
| PHAS 415. | 4 | PHAS 422. | 2 |
| PHAS 420. | 1 | PHAS 424. | 1 |
| PHAS 430. | 2 | PHAS 435. | 3 |
| PHAS 450. | 3 | PHAS 455. | 3 |
| PHAS 482. | 1 | PHAS 460. | 3 |
| | <hr/> 20 | PHAS 483. | 2 |
| | | | <hr/> 20 |

After four years a bachelor's degree with a major in biomedical sciences will be awarded.

Fifth Year

A master's degree in physician assistant studies will require a senior project plus completion of four eight-week clerkships and two four-week clerkships.

| | | | |
|---------------|---|---------------|----|
| PHAS 470..... | 6 | PHAS 480..... | 3 |
| PHAS 471..... | 6 | PHAS 481..... | 3 |
| PHAS 472..... | 6 | PHAS 490..... | 6 |
| PHAS 473..... | 6 | | |
| PHAS 474..... | 3 | | 42 |
| PHAS 475..... | 3 | | |

DEPARTMENT OF SPEECH PATHOLOGY AND AUDIOLOGY

The Department of Speech Pathology and Audiology at Marquette University offers an undergraduate degree in Speech Pathology and Audiology and a master's degree in Speech-Language Pathology. The undergraduate program is considered pre-professional, meaning that a master's 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 towards preparing students for the Certificate of Clinical Competence in Speech-Language Pathology (CCC-SLP). The graduate curriculum offers advanced coursework 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 master's degree program accredited by the Council of 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 includes approximately 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 for acceptance 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.

EARLY ADMISSION PROGRAM (EAP)

The Department of Speech Pathology and Audiology offers an Early Admission Program 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 degree requirements, their admission as a regular degree status (RDS) student is activated.

BILINGUAL ENGLISH-SPANISH CERTIFICATE (BIES)

The Department of Speech-Pathology and Audiology offers a Bilingual English-Spanish Certificate (BESC) as part of its Master's Degree program in Speech-Language Pathology. The BESC program prepares speech-language pathology students who are proficient in Spanish to evaluate and treat speech, language and hearing problems in individuals who are Spanish-dominant speakers 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 142 — Phonetics and SPPA 148 — 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 the BESC program in the Department of Speech Pathology and Audiology and an academic advisor in the Department of Foreign Languages and Literature for advising regarding potential admission to the BESC 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 advisors throughout the course of their study toward establishing this proficiency prior to enrollment in clinical practicum's. 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 freshman are accepted for the fall term.

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 may be admitted if they carry a quality point average of 2.400 as a freshman, 2.600 as a sophomore, or a 2.800 as a junior, based on a 4.0 system. A student should understand that a minimum quality point average of 3.000 is required for acceptance into most graduate programs.

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.

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 student 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 QPA of 2.80 at the conclusion of their sophomore year to continue the program. Credits include the following requirements:

CORE 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) curriculum is included in the Speech Pathology and Audiology (SPPA) Core Curriculum requirements.

Rhetoric (R)6 credits

All students must complete ENGL 001 — Expository Writing 1 and ENGL 002 — Expository Writing 2 for a total of six credit hours in English Composition. Non-native speakers of English should consult the director of the English as a Second Language Program concerning concurrent registration in ESLP 010 and the section of the ENGL 001 designated for non-native speakers.

Mathematical Reasoning (MR)3 credits

All students must complete MATH 060 — Modern Elementary Statistics.

Diverse Cultures (DC)3 credits

All student must complete a course approved for inclusion in the UCCS curriculum.

Histories of Cultures and Societies (HCS)6 credits

All students must complete HIST 001 — Growth of Western Civilization 1 and HIST 002 — Growth of Western Civilization 2.

Individual and Social Behavior (ISB)6 credits

All students must take PSYC 001 — General Psychology and PSYC 101 — Developmental Psychology: Conception through Adolescence.

Literature and Performing Arts (LPA)5-6 credits

All students must take three credits in either English literature or foreign language literature (original or translation) and 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.

Science and Nature (SN)7-9 credits

All students must complete at least one of the following courses in the biological sciences: BISC 015, BIOL 001or BIOL 002 AND complete PHYS 001.

Human Nature and Ethics (HNE)7-9 credits

All students must complete PHIL 050 — Philosophy of Human Nature, PHIL 104 — Theory of Ethics and a 1-3 credit course in medical ethics.

Theology (T)6 credits

All students must complete THEO 001 — Introduction to Theology and another THEO course approved for inclusion in the UCCS curriculum.

Linguistics 3 credits

All students must complete either ENGL 102 — Structure of English Language or ENGL 103 — English Linguistics.

Foreign Language0-8 credits

All students must demonstrate one-year college competency in a foreign language — foreign language 001-002. 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 001 and 002 to complete the requirement. Students who wish to continue studying the same language begun in high school must fill-out and return the Foreign Language Questionnaire. On the basis of the achieved score, students will be placed in the appropriate language course. Students who are placed in 003 or higher are exempt from the foreign language requirement. For further details, see the University section on Placement Credit in Foreign Languages.

REQUIREMENTS FOR A SPPA 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:

Required:

| | |
|----------|---|
| SPPA 010 | Introduction to Communicative Disorders (3 credits) |
| SPPA 031 | Phonetics (3 credits) |
| SPPA 036 | Anatomy and Physiology of the Speech and Hearing Mechanisms (3 credits) |
| SPPA 134 | Speech Science (3 credits) |
| SPPA 139 | Normal Speech and Language Development (3 credits) |
| SPPA 140 | Language Disorders in Children (3 credits) |
| SPPA 142 | Articulation Disorders (3 credits) |
| SPPA 143 | Stuttering (3 credits) |
| SPPA 151 | Clinical Procedures and Management (3 credits) |
| SPPA 153 | Clinical Practicum: Speech Pathology (1credits) |
| SPPA 158 | Diagnostic Methods in Speech Pathology (3 credits) |
| SPPA 172 | Introduction to Audiology (3 credits) |

and an additional four (4) semester credit hours in Speech Pathology and Audiology courses selected from:

| | |
|----------|--|
| SPPA 147 | Introduction to Neurological Disorders of Communication (3 credits) |
| SPPA 152 | Methods and Procedures in School Speech and Hearing Programs (3 credits) |
| SPPA 154 | Clinical Practicum - Speech Pathology (1 credits) |
| SPPA 161 | Use of Computers and Other Instrumentation in Speech Pathology (3 credits) |
| SPPA 173 | Hearing Problems (3 credits) |
| SPPA 174 | Aural Rehabilitation (3 credits) |
| SPPA 179 | Clinical Practicum - Audiology (1 credits) |

REQUIREMENTS FOR A 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 advisor about pursuing a minor.

UNDERGRADUATE PRACTICUM IN SPEECH PATHOLOGY AND AUDIOLOGY

The student majoring in Speech Pathology and Audiology may complete approximately 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 in second semester of the junior year and is generally completed in two semesters.

SUPPLEMENTAL COURSEWORK

The selection of elective courses will be determined by the professional goals of the student. An academic advisor 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:

- EDUC 078 Psychology of Human Development and Learning (3 credits)
- EDUC 088 Exceptional Children and Youth (3 credits)
- SPPA 148 Multicultural Issues for Speech-Language Pathologists (3 credits)
- SPPA 152 Methods and Procedures in School Speech and Hearing Programs (3 credits)

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

Housed in Monitor Hall, the Marquette University Speech and Hearing Clinic serves as a working laboratory for speech pathology and audiology students. The clinic has therapy rooms, a diagnostic suite, pre-school language room, child language laboratory, voice laboratory, augmentative/alternate communications laboratory, oral motor and phonology laboratory, neurolinguistics laboratory, and an audiology suite. Other speech pathology and audiology laboratories include a speech science laboratory, student computer room and materials center.

CURRICULA INFORMATION**TYPICAL PROGRAM FOR SPEECH PATHOLOGY AND AUDIOLOGY MAJORS***Freshman*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|------------------------|-----------|
| SPPA 010 | 3 | SPPA 036 | 3 |
| ENGL 001 | 3 | ENGL 002 | 3 |
| HIST 001 | 3 | UCCS (SN) | 3-5 |
| MATH 060 | 3 | Foreign Language | 4 |
| Foreign Language | 3-4 | Linguistics | 3 |
| <hr/> | | <hr/> | |
| 15-16 | | 16-18 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|------------------|-----------|
| SPPA 031 | 3 | SPPA 140 | 3 |
| SPPA 139 | 3 | SPPA 142 | 3 |
| PHIL 050 | 3 | EDUC 078 | 3 |
| PSYC 001 | 3 | THEO 001 | 3 |
| PHYS 001 | 4 | UCCS (LPA) | 2-3 |
| | | HIST 002 | 3 |
| <hr/> | | <hr/> | |
| 16 | | 17-18 | |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------|-----------|----------------------------|-----------|
| SPPA 134 | 3 | SPPA 143 | 3 |
| PSYC 101 | 3 | SPPA 151 | 3 |
| PHIL 104 | 3 | SPPA 153 | 1 |
| EDUC 192 | 3 | SPPA 172 | 3 |
| UCCS (T) | 3 | PSYC 107 or EDUC 088 | 3 |
| UCCS (LPA) | 3 | Medical Ethics | 1-3 |
| | | Elective | 3 |
| <hr/> | | <hr/> | |
| 18 | | 17-19 | |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------------|-----------|-----------------|-----------|
| SPPA 152 | 3 | SPPA 147 | 3 |
| SPPA 154 | 1 | SPPA 158 | 3 |
| SPPA 173 | 3 | UCCS (DC) | 3 |
| PSYC 108, 131 or 137 | 3 | Elective | 3 |
| UCCS (T) | 3 | Elective | 3 |
| Elective | 3 | | |
| Elective | 3 | | |
| <hr/> | | <hr/> | |
| 19 | | 15 | |

COURSE DESCRIPTIONS

HEALTH SCIENCES (HESC)

HESC 001. Orientation to Health Sciences 1 sem. hr.

Introduction to the health care fields. Orientation to college programs and resources. Information on Graduate and Professional schools and career awareness. Offered every term. *Prereq: Freshman Standing; S/U grade assessment.*

HESC 010. Scientific Writing 3 sem. hrs.
Technical writing skills, literature searches and scientific references, review of the literature, evidence-based medical writing and structure of scientific journal papers.

HESC 100. International Study in Health Sciences 0-3 sem. hrs.
Structured travel, work and study programs in International Health Sciences with other colleges/universities. Program includes special advising. *Prereq: Consent Required; Consent of Assistant Dean. Approved for full-time study at another college/university abroad, but will NOT be certified as full-time by Marquette University.*

HESC 190. Health Sciences Undergraduate International Exchange 0 sem. hrs.
Approval by College of Health Sciences

HESC 195. Independent Study 1-3 sem. hrs.
Prereq: Consent required; consent of assistant dean.

HESC 198. Special Topics in Health Sciences 1-3 sem. hrs.
Selected topics in health sciences. Specific topics will be designated in the *Timetable of Classes*. Offered occasionally.

BIOMEDICAL SCIENCES (BISC)

Chair and Professor: Vaughn

Professor: Brooks

Associate Professor: W. Bell, Cullinan, Iorio,

Kos, Lobner, Rajala, Siebenlist

Assistant Professor: Baker, Best,

Ghasemzadeh, Mantsch, Peoples

Clinical Assistant Professor: Carroll

Laboratory Supervisor: Franklin

Adjunct Associate Professor: Biel, Curtis

Adjunct Assistant Professor: Basile, Berman,

Brophy, Cimrmancio, Crowe, Feldman, Jurken,

Levene, Papanek, Raff, Romans, Roznik,

Schmidt, Seeds, Shinnors, Troy

Adjunct Clinical Instructor: Wenninger

The department offers human-oriented courses in anatomy, biochemistry, microbiology, nutrition, pathology, pharmacology and physiology at the undergraduate and professional level. Courses available to undergraduates and professional students are described in this section.

BIOMEDICAL SCIENCES (BISC)

BISC 005. Organic Chemistry for the Health Sciences 2 sem. hrs.

An introduction to organic chemistry, stressing the physical properties and representative reactions of the common organic functional groups. Offered fall term. *Prereq: CHEM 001 and CHEM 002.*

BISC 006. Chemistry for the Health Professions 3 sem. hrs.
Prereq: DEHY major; or NURS major.

BISC 007. Biochemistry for the Health Professions 3 sem. hrs.
Carbohydrates, lipids, proteins, enzymes, bioenergetics, metabolism of carbohydrates, lipids, proteins, and nucleotides. Emphasis placed on health and disease. Offered spring term. *Prereq: BISC 006; or cons. of instr.; BISC 006 or courses in general and organic chemistry or consent of instructor.*

▲BISC 010. Contemporary Issues in Nutrition 3 sem. hrs.
Personalized nutrition applications for health promotion designed for non-science majors. Topics include nutrients, life cycle nutrition, weight management, disordered eating, dietary supplements (including botanicals) and nutrition and fitness. Offered spring term.

BISC 013. Fundamentals of Microanatomy 2 sem. hrs.
Microscopic anatomy of special topics. *Prereq: PPTH major; Does not count toward requirements for major.*

▲BISC 015. Principles of Human Anatomy and Physiology 5 sem. hrs.
Principles of Human Anatomy and Physiology is an introduction to the structures and functions of the human body. Laboratory included. Offered spring term.

BISC 030. Introduction to Dentistry 1 sem. hr.
Introduction to laboratory techniques used in dentistry. Offered spring term. S/U grade assessment.

BISC 105. Co-op/Intern in Biomedical Sciences 1-3 sem. hrs.
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. *Prereq: Consent Required; S/U grade assessment Consent of Internship Director.*

BISC 110. Nutritional Aspects of Health 3 sem. 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. Offered fall term. *Prereq: BISC major and BISC 007; or BISC major and BIOL 100; or cons. of instr.*

BISC 112. Head and Neck Anatomy 3 sem. hrs.

Comprehensive review 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. Offered fall term. *Prereq: BISC 015; or BISC 135.*

BISC 113. Biochemistry 4 sem. hrs.
The chemistry of proteins, carbohydrates, lipids and nucleic acids, metabolic regulation of human cells as well as changes in diseases are discussed. *Prereq: CHEM 023 and CHEM 024*

BISC 115. Human Microbiology 3 sem. hrs.
Cytology, physiology, genetics and ecology of bacteria, viruses, fungi and animal parasites of medical and dental 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. No laboratory exercises. Offered fall term. *Prereq: BISC 007; or BIOL 100; or cons. of instr.*

BISC 120. Pharmacology 3 sem. 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. Offered spring term only. *Prereq: BISC 007 and BISC 015; or BISC 007 and BISC 145; or BIOL 100 and BISC 015; or BIOL 100 and BISC 145.*

BISC 125. Human Microanatomy 4 sem. 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. Offered fall term.

BISC 126. Oral Histology 2 sem. hrs.
The microscopic anatomy of the oral cavity, the developmental sequences leading to the appearance of the mature structures and developmental errors which result in pathology, and distinctions between structures in the oral cavity and similar tissue in the rest of the body. Offered spring term. *Prereq: BISC 125.*

BISC 130. Human Gross Anatomy 5 sem. 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. Offered fall term. *Prereq: PPTH major; or PHAS major.*

BISC 135. Human Anatomy 4 sem. hrs.

A regional approach to human anatomy where all body systems are integrated. Correlations between structure and function are emphasized. Laboratory included. Offered fall term.

BISC 136. Advanced Human Anatomy 2 sem. hrs.

This laboratory course takes a regional approach to the dissection of human cadaveric material and includes all body structures/systems. Enrollment is limited based upon specimen availability. Offered spring term.
Prereq: BISC 135 and cons. of instr.

BISC 145. Human Physiology 4 sem. hrs.

Human physiology including blood and circulation, muscular, neuronal and sensory systems, renal and respiratory systems, digestion, metabolism, reproduction, and their control by the endocrine and central nervous systems. Offered spring term. *Prereq: BIOL 100 and BISC 135 and CHEM 001 and CHEM 002; or BISC 007 and BISC 135 and CHEM 001 and CHEM 002.*

BISC 150. General Pathology 3 sem. 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, video tapes, slides and examination objectives. Offered spring term. *Prereq: BISC 135 and BISC 145; or BISC 015; or cons. of instr.*

BISC 160. Molecular Pathology 3 sem. hrs.

Fundamental concepts of cellular and molecular biology will be presented. These concepts will be applied toward understanding the mechanisms of specific human diseases, therapeutic interventions and current research efforts. Offered spring term. *Prereq: BISC 007 and BISC 150 which may be taken concurrently; or BIOL 100 and BISC 150 which may be taken concurrently.*

BISC 165. Microbiology Laboratory 1 sem. hr.

Introduction to various topics of microbiology laboratory including the isolation, cultivation, enumeration and characterization of bacteria of human medical importance. Brightfield, dark-field, and phase contrast microscopy are utilized. Specialized techniques include antibiotic susceptibility testing, anaerobic cultivation and immunological assays. Offered spring term.
Prereq: BISC 410 which may be taken concurrently; or BISC 115.

BISC 180. Oral Pathology 3 sem. hrs.

Lesions, tissue changes, clinical symptoms, signs and manifestations occurring in diseases which affect the oral cavity. Offered fall term.
Prereq: BISC 020 and BISC 150.

BISC 195. Independent Study 1-6 sem. hrs.

A reading and/or research program under the direct supervision of a faculty member of the Department of Biomedical Sciences.
Prereq: cons. of dept. ch.

BISC 198. Topics in Biomedical Sciences 1-3 sem. hrs.

Selected topics in biomedical sciences. Specific topics will be designated in the *Timetable of Classes*. Offered occasionally.

BISC 410. Microbiology 4 sem. hrs.

This course focuses on infectious agents of human medical importance and on the host pathogen interaction. Topic areas include the general characteristics of bacteria, viruses, fungi and parasites as well as the etiology, pathogenesis, laboratory identification, and epidemiology of selected diseases. Control of microorganisms is discussed in terms of sterilization, disinfection, chemotherapy and immunization. The immune system and the immune response are discussed. This course surveys the indigenous oral microflora with particular emphasis on the role of micro-organisms in oral disease especially caries and periodontal disease. Offered spring term. *Prereq: BISC 413.*

BISC 413. Biochemistry 4 sem. hrs.

Biochemistry of microbial cells and human cells are compared and contrasted. The chemistry of proteins, carbohydrates, lipids and nucleic acids, metabolic regulation of human cells as well as changes in diseases are discussed. Offered fall term. *Prereq: CHEM 023 and CHEM 024 and cons. of instr.; or enrolled in dentistry.*

BISC 414. General Histology 4 sem. hrs.

This course is a study of the normal microscopic structure and function of human cells, tissues and organs. The structural basis for various physiological and pathological processes such as inflammation and endocrine cycles is presented. The student is also introduced to tissues of the oral region that are studied in detail in COCO 512. Laboratory exercises promote visual identification of structure. Offered fall term.

BISC 415. Biomedical Systems 1 3 sem. hrs.

Module 1 of a systems-based course integrating anatomy, physiology and pathology including dental clinical correlates.

BISC 416. Biomedical Systems 2 3 sem. hrs.

Module 2 of systems-based course integrating anatomy, physiology and pathology including dental clinical correlates.

BISC 425. Biomedical Systems 3 3 sem. hrs.

Module 3 of a systems-based course integrating anatomy, physiology and pathology including dental clinical correlates.

BISC 426. Biomedical Systems 4 4 sem. hrs.

Module 4 of a systems-based course integrating anatomy, physiology and pathology including dental clinical correlates.

BISC 435. Pharmacology 4 sem. hrs.

A survey format will present the pharmacology of drugs used in treatment of non-dental clinical conditions that might be encountered in the dental patient. The influence of such disorders and their indicated drug therapies upon dental drug therapy will be considered. *Prereq: Enrolled in Dentistry and BISC 413 and BISC 423; or Enrolled in Dentistry and BISC 145 and BISC 413; or PHAS major and BISC 413 and BISC 423; or PHAS major and BISC 145 and BISC 413.*

BISC 450. Remediation 0-6 sem. hrs.

Variable credits. Variable titles.

BISC 495. Independent Study 1-6 sem. hrs.

Prereq: cons. of dept. ch.

CONJOINT COURSES (COCO)

The following courses are presented jointly by faculty from the Department of Biomedical Sciences and the School of Dentistry.

DENT 417. Oral Biology 4 sem. hrs.

This course covers oral histology and oral microbiology/immunology, correlating this information with clinical situations and focusing on the immunopathology of periodontal disease. An overview of current and accepted treatment modalities will be covered, including oral immunity and caries immunization. Offered spring term. *Prereq: BISC 125 or BISC 414, BISC 410 which may be taken concurrently, and cons. of instr.*

CLINICAL LABORATORY SCIENCE (CLLS)

*Chairperson and Associate Professor: Milson
Associate Professor: Laatsch
Adjunct (clinical) Assistant Professor: Maticek, Schmus*

*Laboratory Supervisor: Kirchner
Medical Advisor: Dunn*

These courses are open to students enrolled in the Department of Clinical Laboratory Science, and to others by special permission of the department chairperson. Successful completion of individual courses does not qualify persons to work in a medical laboratory. For a description of courses in the major which are offered in the College of Arts and Sciences, see the College of Arts and Sciences section of this bulletin.

Courses listed as "coreq" must be taken concurrently.

CLLS 001. Introduction to Clinical Laboratory Methods 1 sem. 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. Offered occasionally (Saturdays).
Enrolled in CLLS Young Scholar Program.

CLLS 010. Concepts in Clinical Laboratory Medicine 3 sem. 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. Offered fall term.
Prereq: CLLS major and BIOL001 which may be taken concurrently and CHEM 001 which may be taken concurrently; High school chemistry and biology with laboratory.

CLLS 050. Forensic Science 3 sem. 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. Offered annually.

CLLS 060. Public Health 3 sem. 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 101. Guided Study 0-4 sem. hrs.

Analysis of selected topics under faculty supervision. Primarily for undergraduate students who wish to enhance their knowledge in selected disciplines through guided study. *Prereq: CLLS major; or cons. of dept. ch.; For sections of 0 credit the grade CR will be used.*

CLLS 124. Medical Bacteriology 4 sem. hrs.

disc.; 4 sem. 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 aerobic bacteria examined. Offered every fall. *Prereq: CLLS major and BIOL 100 and BIOL 185 which may be taken concurrently.*

CLLS 127. Medical Microbiology

4 sem. 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 included. Laboratory involves isolation and identification of medically important microorganisms, including proper patient specimen processing. Offered spring term. *Prereq: CLLS major and BISC 145 which may be taken concurrently and CLLS124.*

CLLS 140. Laboratory Instrumentation

4 sem. hrs.

The application of the principles of basic electronics, spectrophotometry, nephelometry, reflectance photometry, fluorometry, electrochemistry, flame emission and atomic absorption to medical laboratory instruments used in diagnostic and research laboratories. Experiments investigate these applications as related to clinical chemistry and hematology. Experience with state-of-the-art automated

instruments and background in quality assurance is provided. Course focuses on team problem-solving and instrument troubleshooting. Offered spring term. *Prereq: CLLS major and CLLS174 which must be taken concurrently.*

CLLS 160. Molecular Diagnostics 3 sem. 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 100; or BISC 007.*

CLLS 173. Analytical and Clinical Chemistry 4 sem. 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. Offered annually. *Prereq: Jr. stndg. and CLLS major.*

CLLS 174. Clinical Hematology 1 4 sem. 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. Offered spring term. *Prereq: CLLS major and CLLS010; BISC 145, CLLS 127 and CLLS 140 must be taken concurrently.*

CLLS 180. Basic Concepts in Clinical Education Methods—Practicum

1 sem. 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 audiovisuals. Offered annually. *Prereq: Sr. stndg. and CLLS major; Individual assignments to clinical laboratory affiliations.*

CLLS 181. Modern Management Concepts for the Clinical Laboratory—Practicum

1 sem. 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. Offered annually. *Prereq: Sr. stndg. and CLLS major; Individual assignments to clinical laboratory affiliations.*

CLLS 183. Clinical Chemistry—Practicum

6 sem. 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. Offered annually. *Prereq: Sr. stndg. and CLLS major; Individual assignments to clinical laboratory affiliations.*

CLLS 184. Clinical Hematology 2—**Practicum** 4 sem. 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. Offered annually. *Prereq: Sr. stndg. and CLLS major; Individual assignments to clinical laboratory affiliations.*

CLLS 185. Clinical Hemostasis—Practicum

3 sem. 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. Offered annually. *Prereq: Sr. stndg. and CLLS major; Individual assignments to clinical laboratory affiliations.*

CLLS 186. Clinical Immunohematology—**Practicum** 6 sem. 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. Offered annually. *Prereq: Sr. stndg. and CLLS major; Individual assignments to clinical laboratory affiliations.*

CLLS 187. Clinical Immunology and Serology—Practicum 2 sem. hrs.

The mechanisms of resistance to disease, especially the antigen-antibody reactions and the diagnostic procedures used in determining this resistance. *Prereq: Sr. stndg. and CLLS major; Individual assignments to clinical laboratory affiliations.*

CLLS 188. Clinical Microbiology—Practicum

6 sem. 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. stndg. and CLLS major; Individual assignments to clinical laboratory affiliations.*

CLLS 189. Clinical Urinology—Practicum

2 sem. hrs.

Physical, chemical and microscopic study of urine with emphasis on the changes exhibited in disease with related physiology. *Prereq: Sr. stndg. and CLLS major; Individual assignments to clinical laboratory affiliations.*

CLLS 195. Independent Study 1-4 sem. hrs.

Offered annually. *Prereq: cons. of dept. ch.*

CLLS 198. Topics in Clinical Laboratory**Science** 1-4 sem. hrs.

Selected topics in clinical laboratory science. Specific topics determined each term. Offered annually.

PHYSICAL THERAPY (PHTH) / ATHLETIC TRAINING (ATTR) EXERCISE SCIENCE (EXSC)

Chairperson, Department of Physical Therapy and Program in Exercise Science and
Professor: L. Pan

Director of Exercise Science and Associate
Professor: Papaneck

Professor: Kloth

Associate Professor: Neumann, Nosse, Rajala, Simoneau, Sobush

Adjunct Associate Professor: Aubert

Assistant Professor: Ng

Clinical Assistant Professor: Ebben, Fuhrman, Geiser, Kontney, Leigh, Schuh, Simenz, Stoeckmann

Clinical Instructors: Berman, Bielefeld, Collopy, M. Diamond, T. Diamond, Falkner, Fantazzi, Geiser, Millington, Olsen, J. Pan, Pollard, Quick, Seeds, Starsky, Thorman, Uhrich, VardenNoven, Wenninger, Wilk

NOTE: PHTH courses numbered below 530 may count toward completion of the undergraduate degree.

PHYSICAL THERAPY

PHTH 001. Introduction to Physical Therapy

1 sem. 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 consent of instructor.*

PHTH 110. Introduction to Kinesiology

2 sem. hrs.

Lecture and laboratory on musculoskeletal system and principles of human movement in normal and abnormal conditions. *Prereq: PHTH major; or ATTR major; or EXSC major; or cons. of instr.*

PHTH 111. Introduction to Physiology and Pathophysiology 2 sem. hrs.

Lecture in physiologic systems including cardiovascular, respiratory, neurological, kidney, muscle, and endocrine. Key pathological conditions to medical professions are discussed. *Prereq: PHTH major; or ATTR major; or EXSC major; or cons. of instr.*

▲ PHTH 112. Culture and Disability

3 sem. 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.*

PHTH 113. Introduction to Anatomy

2 sem. hrs.

The course provides lecture and laboratory experience in anatomy. Anatomy of limbs, back, thorax, abdomen, pelvis, head and neck. Functional emphasis on musculoskeletal system. Exposure to cadaver anatomy. *Prereq: PHTH major; or ATTR major; or EXSC major; or cons. of instr.*

PHTH 114. Introduction to Research

1 sem. hr.

The course provides an introduction to research methods, design, evidenced based practice, literature searches, exposure to research laboratories, hypothesis testing, ethical issues, data collection principles. *Prereq: PHTH major; or ATTR major; or EXSC major; or cons. of instr.*

PHTH 402. Professional Interactions

2 sem. hrs.

General survey of the profession with emphasis on the history and development of physical therapy. Professional interactions are explored with emphasis on the student as a learner and teacher. *Prereq: PHTM major; or cons. of instr.*

PHTH 405. Patient Management and Mobility

2 sem. hrs.

Lecture/lab. Basic patient management skills are presented and practiced including transfers, gait training, activities of daily living, range of motion and muscle reeducation. Direct access in physical therapy, interpreting referrals, written communication and time management will be integrated with the overall functional analysis of providing basic care. *Prereq: PHTM major; or cons. of instr.*

PHTH 408. Physical Agents/Wound Healing

3 sem. hrs.

Lecture/lab. Principles and methods underlying the physical and physiological basis for therapeutic application of soft tissue mobilization, massage, hydrotherapy, cryotherapy, ultraviolet radiation, pneumatic intermittent compression, spinal traction, pulsed electromagnetic fields and many thermal agents. Evaluation and treatment of chronic wounds will be presented along with infection control and aseptic techniques. *Prereq: PHTM major; or Enrolled in Health Sciences - Professional; or cons. of instr.*

PHTH 412. Psychosocial Aspects of Disability 2-3 sem. hrs.

Discussion of the psychosocial influences affecting clients and care providers. *Prereq: PHTM major; or Enrolled in Health Sciences - Professional*

PHTH 415. Aging 2 sem. hrs.

Course details background information on the aging process. Combines lecture, interactions with aged clients and clinical visits. Age-related and pathological changes which occur in the major physiological systems over time are

compared and contrasted. Modes of providing service to aged clients is explored. *Prereq: PHTM major; or Enrolled in Health Sciences - Professional*

PHTH 418. Physiology of Activity 3 sem. hrs.

This lecture/laboratory course will concentrate on the assessment of activity tolerance in, and basic principles of, exercise prescriptions for normal healthy individuals who are either trained or untrained. A functional approach will be emphasized and factors that enhance or impede performance will be examined. Various training strategies will be introduced. *Prereq: PHTM major; or Enrolled in Health Sciences - Professional; Must have current certification in CPR for the health care provider*

PHTH 422. Research 1 sem. hr.

Lecture course focusing on the elements of research. Students apply the concepts of validity, reliability and objectivity to research articles to critically analyze literature, and design a research study for an identified problem. *Prereq: PHTM major; or cons. of instr.; Fourth year PHTM major.*

PHTH 425. Kinesiology 1 3 sem. hrs.

Lecture/laboratory experiences. Anatomy of the muscular and joint systems in normal and abnormal conditions in the upper extremities. Course includes the biomechanics of normal and abnormal muscle and joint action. *Prereq: PHTM major.*

PHTH 428. Physical Therapy Measurement and Assessment 2 sem. hrs.

Lecture and clinical laboratory course. The students will learn the general concepts and specific techniques of measurement of motion, flexibility and strength using diverse instrumentation. *Prereq: PHTM major.*

PHTH 432. Orthopedics 1 2 sem. hrs.

Lecture, demonstration and laboratory experiences. General concepts of evaluation and treatment of musculoskeletal conditions are taught. Includes joint mobilization techniques, therapeutic exercise prescription and concepts of tissue healing. *Prereq: PHTM major.*

PHTH 435. Practicum 1 Seminar 2 sem. hrs.

Lecture and clinical laboratory course with emphasis on communication in a professional manner with patients, family and staff. Student will have an opportunity to perform skills from patient management/mobility and physical agents/wound healing. *Prereq: PHTM major and PHTH436 which must be taken concurrently.*

PHTH 436. Practicum 1 Clinical 4 sem. hrs.

Four weeks of clinical experience after 12 weeks of classroom PHTH concurrently with PHTH 435. *Prereq: PHTM major and PHTH435 which must be taken concurrently; S/U grade assessment. Must be taken in PHTH course sequence.*

PHTH 442. Medical/Surgical**Pathophysiology 2 sem. hrs.**

Lecture/clinical observations course will present the pathophysiology of cardiovascular, respiratory, renal, endocrine and immune system disorders. Medical and surgical perspectives of treatment intervention in an acute environment will be presented. Guest presenters will be utilized. Offered in spring semester.

Prereq: PHTM major.

PHTH 445. Kinesiology 2 3 sem. hrs.

Continuation of PHTH 425 with emphasis on head, trunk and lower extremities, including gait and posture. Lecture, demonstration and laboratory practice. *Prereq: PHTM major and PHTH425*

PHTH 452. Orthopedics 2 4 sem. hrs.

Continuation of PHTH 432 with an emphasis on the evaluation and treatment of specific musculoskeletal injuries/dysfunctions. Includes surgical, non-surgical, traumatic, chronic and sports-related conditions. *Prereq: PHTM major and PHTH432.*

PHTH 455. Human Growth and Development 2 sem. hrs.

Selected aspects of normal human growth and motor development focusing on prenatal, infancy and childhood years. Lecture and interactions with infants and toddlers. *Prereq: PHTM major.*

PHTH 458. Human Neuroanatomy 4 sem. hrs.

Structure and function of the central nervous system (CNS). Lecture, clinical problem solving sessions to predict symptoms given a certain lesion within the CNS. *Prereq: PHTM major; or PHAS major.*

PHTH 462. Medical/Surgical: Rehabilitation 2 sem. hrs.

Lecture/laboratory course concentrates on chronic diseases and conditions that will necessitate long-term therapeutic intervention. Special attention will be paid to pain management techniques, orthotic fabrication for specific disease conditions, (arthritis and rheumatic diseases), prosthetics, and prosthetic training. *Prereq: PHTM major.*

PHTH 464. Clinical Seminar 1 1 sem. hr.

A clinical seminar course to discuss issues related to Practicum 435 and to prepare for Practicum 465. Topics to include communication in a professional manner with patients, family and staff, evaluation tools, documentation, treatment planning skills, chart review, site selection and evaluation of ability based assessment. *Prereq: PHTH435; S/U grade assessment.*

PHTH 465. Practicum 2 0 sem. hrs.

Clinical laboratory course. Student has opportunity to apply course work with supervision and assistance including but not limited to: orthopedic evaluations, note writing, goal setting, treatment modification, measurement, history taking, chart reading, manual therapy, and assessment of the development sequence. *Prereq: PHTM major; S/U grade assessment.*

PHTH 468. Neurological Rehabilitation**4 sem. hrs.**

Physiology of neurological disorders including mechanisms of disease and treatment. Lecture, lab and clinic visits. *Prereq: PHTM major; 6th year PHTM major.*

PHTH 472. Contemporary Issues and Management Principles 3 sem. hrs.

Discussions of recent historical and current external environmental factors affecting the delivery of health care services are interwoven with discussions of business, management, and supervisor/leadership principles applicable to the health care service industry. Particular attention is focused on the delivery of physical therapy services under changing environmental conditions. *Prereq: PHTM major; or cons. of instr.; 6th year PHTM major. Open to practicing physical therapists.*

PHTH 475. Pediatric Disorders and**Intervention Strategies 3 sem. hrs.**

Lecture/discussion of developmental disabilities and other selected pediatric disorders. Concepts of physical therapy assessment, goal setting and treatment of the pediatric patient; common treatment theories and techniques and their application to children. *Prereq: PHTM major; 6th year PHTM major.*

PHTH 478. Electrotherapy/**Electrophysiological Testing 3 sem. hrs.**

Lecture/lab. Principles and methods related to the physical and physiological basis for electrotherapeutic interventions for clinical treatment of individuals with musculoskeletal dysfunction, chronic wounds, motor control deficits, acute and chronic pain, and other selected conditions. Electrophysiological testing will include electromyography and nerve conduction velocity evaluation. *Prereq: PHTM major; 6th year PHTH major.*

PHTH 482. Cardiopulmonary Rehabilitation 3 sem. hrs.

Lecture/laboratory course will focus on recuperative/restorative management of clients having primary or secondary involvement of the cardiovascular and/or pulmonary systems. A total gas delivery approach will be emphasized through case presentations. *Prereq: PHTM major; 6th year PHTM major. Certification in Basic Life Support (CPR)*

PHTH 484. Clinical Seminar 2 1 sem. hr.

A clinical seminar course to discuss issues related to Practicum 465 and to prepare for Practicum 485. Topics to include evaluation tools, documentation, treatment planning skills, site selection, expectations of entry-level ability to practice the profession of physical therapy in various health care settings, and evaluation of ability based assessment. *S/U grade assessment. Prereq: PHTM major and PHTH465; S/U grading*

PHTH 485. Practicum 3 8 sem. hrs.

Supervised physical therapy clinical experience on a regular workday basis. Student will demonstrate entry-level ability to practice the profession of physical therapy in various health care settings. *S/U grade assessment. Prereq: PHTM major; 6th year PHTH major S/U grade assessment.*

PHTH 486. Practicum 4 8 sem. hrs.

Supervised physical therapy clinical experience on a regular workday basis. Student will demonstrate entry-level ability to practice the profession of physical therapy in various health care settings. *S/U grade assessment. Prereq: PHTM major; 6th year PHTH major S/U grade assessment.*

PHTH 487. Practicum 5 0-6 sem. hrs.

Supervised physical therapy clinical experience on a regular workday basis. Student will demonstrate entry-level ability to practice the profession of physical therapy in various health care settings. *S/U grade assessment. Prereq: PHTM major; 6th year PHTH major S/U grade assessment.*

PHTH 495. Independent Study 1-3 sem. hrs.

Independent study and research in special areas of interest to physical therapy under faculty supervision. Offered every term. No mid-term assessment assigned. *Prereq: PHTM major and cons. of instr. and cons. of dept. ch.*

PHTH 498. Topics in Physical Therapy in the Professional Phase 0-3 sem. hrs.

Selected topics not a part of the regular course work taught because of a special need, interest or opportunity. *Prereq: PHTM major and cons. of instr.*

PHTH 503. Patient Management 1 3 sem. hrs.

Lecture/laboratory course simulating patient interactions and discussing learning units that enforce application of coursework to clinical practice. *Prereq: PHTH major.*

PHTH 507. Patient Management 2 2 sem. hrs.

Lecture/laboratory course simulating patient interactions and discussing learning units that enforce application of coursework to clinical practice. *Prereq: PHTH major.*

PHTH 508. Physical Technologies/Wound Management 4 sem. hrs.

Lecture and clinical laboratory course (based on research evidence and/or best practice) that presents the physical and physiological basis and the principles and methods that lead to clinical outcomes following the therapeutic application of thermotherapy, cryotherapy, actinotherapy and mechanotherapy in the treatment of disorders involving the musculoskeletal, neuromuscular, cardiovascular and integumentary systems. Content related to the integumentary system will include pathophysiology, diagnosis and management of chronic wounds, management of thermal injuries and edema. The course will also include infection control and aseptic technique. *Prereq: PHTH major; or Enrolled in Health Sciences - Professional; or cons. of instr.*

PHTH 510. Physical Technologies/ Electrotherapy/Electrophysiological Testing 4 sem. hrs.

Lecture and clinical laboratory course (based on research evidence and/or best practice) that presents the physical and physiological basis and the principles and methods that lead to: 1. clinical outcomes following the therapeutic application of thermotherapy, cryotherapy, actinotherapy and mechanotherapy in the treatment of disorders involving the musculoskeletal, neuromuscular, cardiovascular and integumentary systems.

mentary systems and 2. for electrotherapeutic interventions for clinical treatment of individuals with musculoskeletal dysfunction, motor control deficits, acute and chronic pain, and other selected conditions. Electrophysiological testing will include electromyography and nerve conduction velocity evaluation. *Prereq: PHTH major.*

PHTH 511. Patient Management 3 2 sem. hrs. Lecture/laboratory course simulating patient interactions and discussing learning units that enforce application of coursework to clinical practice. *Prereq: PHTH major.*

PHTH 512. Culture and Disability 3 sem. 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: PHTH major; or cons. of instr.*

PHTH 515. Pathophysiology and Aging 3 sem. hrs.

Lecture/clinical observations course will present the pathophysiology of cardiovascular, respiratory, renal, endocrine and immune system disorders. Course details background information on the aging process. Age-related and pathological changes which occur in the major physiological systems over time are compared and contrasted. Modes of providing service to aged clients is explored. *Prereq: PHTH major; or Enrolled in Health Sciences - Professional.*

PHTH 518. Physiology of Activity 3 sem. hrs. This lecture/laboratory course will concentrate on the assessment of activity tolerance in, and basic principles of, exercise prescriptions for normal healthy individuals through the life span who are either trained or untrained. A functional approach will be emphasized and factors that enhance or impede performance will be examined. Various training strategies will be introduced. *Prereq: PHTH major; or Enrolled in Health Sciences - Professional; and current certification in CPR for the health care provider is a prerequisite of this course.*

PHTH 519. Diagnostic Imaging Testing 3 sem. hrs.

Study of diagnostic imaging techniques as they relate to physical therapy practice areas. Includes study of common medical tests.

PHTH 522. Evidence Based Decision Making 1 2 sem. hrs.

Lecture course focusing on the elements of research. Students apply the concepts of validity, reliability and objectivity to research and critically analyze literature. Evidence based decision making is examined and applied to practice patterns. *Prereq: PHTH major; or cons. of instr.*

PHTH 523. Evidence Based Decision Making 2 1 sem. hr.

Evidence based practice applied to clinical content areas, including orthopedics. Web based assignments. Students will complete individual projects and present their work. *Prereq: PHTH major.*

PHTH 525. Kinesiology 1: The Upper Extremity 3 sem. hrs.

Anatomy of the muscular and joint systems in normal and abnormal conditions in the upper extremities. Course includes surface anatomy, the biomechanics of normal and abnormal muscle and joint action. Lecture, demonstration and laboratory practice. *Prereq: PHTH major.*

PHTH 528. Physical Therapy Evaluation, Tests, and Measures 2 sem. hrs.

Lecture and clinical laboratory course. The students will learn the general concepts and specific techniques of Physical Therapy evaluation including tests and measures including range of motion, flexibility and strength using diverse instrumentation. *Prereq: PHTH major.*

PHTH 532. Orthopedics 1 4 sem. hrs.

Lecture, demonstration and laboratory experiences. The elements of patient/client management (examination; evaluation; diagnosis; prognosis; and intervention) are applied to musculoskeletal conditions. *Prereq: PHTH major.*

PHTH 536. Clinical 1 4 sem. hrs.

Four week clinical experience in physical therapy practice at various clinical sites throughout the US. Students complete specific learning units. *Prereq: PHTH major; Must be taken in PHTH course sequence. S/U grade assessment.*

PHTH 545. Kinesiology 2: The Spine and Lower Extremity 3 sem. hrs.

Continuation of PHTH525 with emphasis on head, trunk and lower extremities, including an introduction to normal gait, posture, and surface anatomy. Lecture, demonstration and laboratory practice. *Prereq: PHTH525*

PHTH 552. Orthopedics 2 4 sem. hrs.

Continuation of PHTH532 with an emphasis on the evaluation and treatment of specific musculoskeletal injuries/dysfunctions. Includes surgical, non-surgical, traumatic, chronic and sports-related conditions. 500 level course contains enhanced content. *Prereq: PHTH532.*

PHTH 555. Life Span Development

3 sem. hrs. Lecture/discussion/lab. Normal growth and motor development from prenatal development to motor adaptation and functional changes in adult years. Special focus on motor behaviors across the life span and implications for the physical therapist, as well as potential influence of motor development in the presence of injury, disease, and disability. Opportunity for interaction with infants, toddlers, children, teens and adults. *Prereq: PHTH major and BISC130.*

PHTH 558. Neuroanatomy 4 sem. hrs.

Structure and function of the central nervous system (CNS). Lecture, clinical correlations, clinical problem solving to predict signs and symptoms in patients with PNS and CNS lesions. *Prereq: PHTH major; or PHAS major.*

PHTH 560. Integrated Medical Neuroscience 2 sem. hrs.

Current topics in medical neuroscience that apply to clinical practice. *Prereq: PHTH major.*

PHTH 564. Evidence Based Decision Making 3 1 sem. hr.

Evidence based practice applied to clinical content areas, including orthopedics, orthotics, prosthetics, and electrotherapy. Web based assignments. Students will complete individual projects and present their work. *Prereq: PHTH535.*

PHTH 565. Clinical 2 10 sem. hrs.

Clinical course in physical therapy practice at various clinical sites throughout the US. Students complete specific learning units. Student has opportunity to apply course work with supervision and assistance including but not limited to: orthopedic evaluations, note writing, goal setting, treatment modification, measurement, history taking, chart reading, manual therapy, and assessment of the development sequence. *Prereq: PHTH major; Must be taken in PHTH course sequence. S/U grade assessment.*

PHTH 570. Motion, Gait Analysis and Rehabilitation 4 sem. hrs.

Advanced analysis of human movement including gait, orthotics and prosthetics. Rehabilitation focuses on physical therapy interventions for patient/clients with chronic diseases and other conditions necessitating long-term therapeutic intervention. *Prereq: PHTH major.*

PHTH 572. Health Care Policy/Management 3 sem. hrs.

Contemporary Issues and Management Principles in physical therapy practice. Discussions of recent historical and current external environmental factors affecting the delivery of health care services are interwoven with discussions of business, management, and supervisor/leadership principles applicable to the health care service industry. Particular attention is focused on the delivery of physical therapy services under changing environmental conditions. 500 level course contains enhanced content. *Prereq: PHTH major; or cons. of instr.; Open to practicing Physical Therapists.*

PHTH 577. Wound Management/Integumentary Physical Therapy 3 sem. hrs.

Lecture and clinical laboratory course (based on research evidence and/or best practice) that presents the physical and physiological basis and the principles and methods that lead to clinical outcomes related to the integumentary system. Content will include pathophysiology, diagnosis and management of chronic wounds, management of thermal injuries and edema. The course will also include infection control and aseptic technique. *Prereq: PHTH major.*

PHTH 578. Electrotherapy/**Electrophysiological Testing** 3 sem. hrs.

Lecture and clinical laboratory course presenting the principles and methods (based on research evidence and/or best practice) and the physical and physiological basis for electrotherapeutic interventions for clinical treatment of individuals with musculoskeletal dysfunction, chronic wounds, motor control deficits, acute and chronic pain, and other selected conditions. Electrophysiological testing will include electromyography and nerve conduction velocity evaluation. 500 level course contains enhanced content. *Prereq: PHTH major.*

PHTH 582. Cardiopulmonary Physical Therapy 3 sem. hrs.

Lecture/lab. course will focus on recuperative/restorative management of clients having primary or secondary involvement of the cardiovascular and/or pulmonary systems. A total gas delivery approach will be emphasized through case presentations. Clinical skills to be taught will be consistent with nationally published Clinical Practice Guidelines that are evidence-based. 500 level course contains enhanced content. *Prereq: PHTH major; Certification in Basic Life Support (CPR).*

PHTH 587. Clinical 5 4-8 sem. hrs.

Clinical experience in physical therapy practice at various clinical sites throughout the US. Students complete specific learning units. Students will demonstrate entry-level ability to practice the profession of physical therapy in various health care settings. *Prereq: PHTH major and PHTH585; or PHTH major and PHTH586; S/U grade assessment.*

ATHLETIC TRAINING**ATTR 020. Prevention and Care of Athletic Injuries** 2 sem. 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 107. Clinical Competencies in Athletic Training 1 1 sem. hr.

Clinical Skills will be assessed via practical experiences. Taping, bracing and evaluation will be emphasized. Includes observation, field work and hands on experience in University and high school training rooms and sports medicine clinics under the direct supervision of a certified athletic trainer. *Prereq: ATTR major and ATTR130 which may be taken concurrently; or cons. of instr.; and current CPR and First Aid certifications. S/U grade assessment.*

ATTR 108. Clinical Competencies in Athletic Training 2 1 sem. hr.

Continuation of ATTR107. Clinical skills will be assessed via practical experiences. Taping, bracing, and evaluation will be emphasized. Includes observation, field work and hands on experience in training rooms and sports medicine clinics under the direct supervision of a certified athletic trainer. *Prereq: Soph. stndg. and ATTR107 and ATTR140 which may be taken concurrently; S/U grade assessment.*

ATTR 120. Clinical Competencies in Athletic Training 3 1 sem. hr.

This course is designed to give credit for and provide recurring evaluation of athletic training skills performed outside of the classroom (practicum basis). Evaluation of and application of skills taught in ATTR 160. *Prereq: Jr. stndg. and ATTR108 and ATTR150 and ATTR160 which may be taken concurrently; S/U grade assessment.*

ATTR 121. Clinical Competencies in Athletic Training 4 1 sem. hr.

This course is designed to give credit for and provide recurring evaluation of athletic training skills performed outside of the classroom (practicum basis). Evaluation of and application of skills taught in ATTR 160. *Prereq: Jr. stndg. and ATTR120 and ATTR170 which may be taken concurrently; S/U grade assessment.*

ATTR 130. Athletic Training Evaluation 1 3 sem. 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. *Prereq: EXSC 115 which may be taken concurrently and cons. of instr.; Anatomy and physiology.*

ATTR 140. Athletic Training Evaluation 2 3 sem. hrs.

Lecture/lab. This course is a continuation of Evaluation 1 and includes assessment of the trunk, back, neck, head and upper extremity. *Prereq: ATTR130 and cons. of instr.*

ATTR 150. Therapeutic Modalities 2 2 sem. 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: ATTR140 and cons. of instr.*

ATTR 160. Rehabilitative/Therapeutic Exercise in Athletic Training 2 2 sem. 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: ATTR140.*

ATTR 170. General Medicine in Athletic Training 3 3 sem. hrs.

Lecture/Lab. This course is designed to describe and assess common general medicine 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: ATTR140; or ATTR150; or cons. of instr.*

ATTR 188. Clinical Competencies in Athletic Training 5 1-2 sem. hrs.

Clinical Skills will be assessed via practical experiences. Basic Injury assessment techniques and competency testing of modalities, advanced evaluation and rehabilitation will be emphasized. Includes observation, field work and hands-on experience in university and high

school training rooms and sports medicine clinics under the direct supervision of a certified athletic trainer. S/U grade assessment.

Prereq: Sr. stndg. and ATTR major and ATTR107 and cons. of instr.; or Jr. stndg. and ATTR major and ATTR107 and cons. of instr.; and current CPR and First Aid certifications S/U grade assessment.

ATTR 189. Practicum in Athletic Training 7-16 sem. 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. *Prereq: Sr. stndg. and ATTR major and Consent of Program Director; S/U grade assessment Current CPR and First Aid certifications.*

ATTR 195. Independent Study 1-4 sem. hrs.

Independent Study. *Prereq: cons. of instr.*

ATTR 196. Topics in Athletic Training 1-4 sem. hrs.

Selected topics, not a part of the regular course work taught because of a special need, interest or opportunity. *Prereq: Jr. stndg. and EXSC major; or Sr. stndg. and EXSC major; or Jr. stndg. and ATTR major; or Sr. stndg. and ATTR major; or cons. of instr.*

EXERCISE SCIENCE**EXSC 010. Emergency Care, CPR and AED** 2 sem. 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: EXSC major; or ATTR major; or cons. of instr.*

EXSC 050. Surface Anatomy and Palpation 1 sem. 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: EXSC major; or ATTR major; or cons. of instr.; anatomy and physiology or concurrent with anatomy and physiology.*

EXSC 090. Introduction to Exercise Science 2 sem. hrs.

Exposure to the fields of exercise science. Current topics of interest including certification requirements and professional development.

EXSC 100. Exercise Leadership 3 sem. 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: EXSC 115.*

EXSC 105. Exercise Science Practicum 1

2 sem. hrs.

Work experience in approved fitness-related agencies. Experience may include fitness testing, evaluation, exercise prescription, instruction, leadership or management in different settings. *Prereq: Jr. stndg. and EXSC major; S/U grade assessment May be dependent on space. Current CPR and First Aid certifications*

EXSC 106. Cognitive and Motor Learning

3 sem. hrs.

Lecture/Lab. A study of the principles of human motor learning development from through adulthood. Instructional emphasis is given to those factors which have implications for exercise and training.

EXSC 110. Kinesiology/Biomechanics

4 sem. 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: BISC 015 and EXSC 115.*

EXSC 115. Exercise Biochemistry and Physiology 5 sem. 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 015 and CHEM 001 and CHEM 002 which may be taken concurrently.*

EXSC 170. Exercise Program Management

2-3 sem. 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.

EXSC 180. Exercise Testing, Prescription and EKG 4 sem. 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: EXSC 115.*

EXSC 186. Exercise Science Practicum 2

7-16 sem. hrs.

Work experience in approved fitness-related agencies. Experience may include fitness testing, evaluation, exercise prescription, instruction. Leadership or management in different settings. *Prereq: Sr. stndg. and EXSC major and Consent of Program Director; and current CPR and First Aid certifications. S/U grade assessment May be dependent on space.*

EXSC 187. Exercise for Special Populations

3 sem. hrs.

Lecture. A study of program modifications and techniques for various populations; which may include for example exercise prescription throughout the life span. *Prereq: EXSC 115.*

EXSC 189. Nutrition and Exercise

Performance 3 sem. 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: BISC 110 and BISC 115.*

EXSC 190. Scientific Principles of Strength and Conditioning 3 sem. 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: EXSC 115.*

EXSC 192. Advanced Exercise Physiology

4 sem. 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. stndg. and EXSC major and EXSC 115; or cons. of instr.; anatomy and physiology.*

EXSC 195. Independent Study 1-4 sem. hrs.

Independent study under the direction of faculty. *Prereq: cons. of instr.*

EXSC 198. Topics in Exercise Science

1-4 sem. hrs.

Selected topics, not a part of the regular course work taught because of a special need, interest, or opportunity. *Prereq: Jr. stndg. and EXSC major; or Jr. stndg. and ATTR major; or Sr. stndg. and EXSC major; or Sr. stndg. and ATTR major; or cons. of instr.*

PHYSICIAN ASSISTANT STUDIES (PHAS)

Chairperson and Assistant Professor:

Gengembre

Assistant Professor: Kazik, Lombardo, Schabla, Smith

Medical Director: Coogan, M.D.

NOTE: PHAS courses may only be taken by PHAS majors admitted to the professional phase of Physician Assistant Studies.

▲ PHAS 117. Ethics and Diversity in Health Care 3 sem. hrs.

The student uses bioethical concepts to identify, analyze and resolve ethical issues in clinical medicine. The student understands the influence of culture, ancestry, ethnicity, gender, age, abilities, sexual orientation, values, beliefs, and life style choices and their impact on the delivery of patient care.

PHAS 405. Introduction to Medical History and Physical Examination 4 sem. hrs.

This course consists of two phases. The first portion of the course develops the student's interviewing skills eliciting a complete medical history. The second portion of the course instructs the student in the methods and modalities to complete an entire adult, wellness exam. At the conclusion of the course, the student is expected to be competent in eliciting a complete medical history and physical exam, appropriately documenting the exam including all positive and negative findings. Medical

terminology is reviewed throughout the course. The student will acquire basic life support certification (CPR). *Prereq: PHAS major; Admitted to professional phase of Physician Assistant studies.*

PHAS 408. Evidence Based Medicine

2 sem. hrs.

This course instructs the student in strategies for interpretation of the medical literature and research. This is accomplished through reviewing the foundations of research methodology as they relate to the study of disease distribution, and issues of study design, data collection and methods of analysis. This course draws heavily on Internet access and requires the student to be familiar with Netscape and electronic mail technologies. Completing the course requires an on-line medical topic search, a review of these findings, and a classroom presentation. The student is encouraged to select an area of interest that may be utilized for PHAS 490. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant studies.*

PHAS 410. Primary Medicine 1 5 sem. hrs.

This course provides a comprehensive presentation of the various disease processes commonly encountered in primary care across the spectrum of clinical medicine. The course employs a system-oriented, problem based approach and clinical information is presented in conjunction with appropriate, correlative lectures or labs in anatomy, physiology, pharmacology, pathology, radiology, laboratory diagnostics, and nutrition. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant studies.*

PHAS 411. Primary Medicine 2 5 sem. hrs.

This course is a continuation of PHAS 410. It provides a comprehensive presentation of the various disease processes commonly encountered in primary care across the spectrum of clinical medicine. The course employs a system-oriented, problem based approach and clinical information is presented in conjunction with appropriated, correlative lectures or labs in anatomy, physiology, pharmacology, pathology, radiology, laboratory diagnostics, nutrition, and preventative approaches. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant studies.*

PHAS 415. Clinical Decision Making 1

2 sem. hrs.

This course is designed to expand the student's medical knowledge base and facilitate critical thinking and clinical diagnostic skills. Patient case histories are presented in correlation with topics from PHAS skills. The Student will develop differential diagnoses and order and interpret appropriate laboratory and imaging studies. Finally, students will demonstrate the ability to succinctly present a working diagnosis, treatment plan, and prognosis. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant studies.*

PHAS 417. Ethics and Diversity in Health Care 3 sem. hrs.

Introduction to healthcare delivery to diverse patient populations. *Prereq: Professional Phase Physician Assistant Student.*

PHAS 418. Applied Clinical Ethics 1 sem. hr. In this one credit course students will consider the wide range of issues in biomedical ethics. Students will master terminology and theoretical concepts relevant to applied clinical ethics. The students will utilize the Jonsen's four-box method to assess clinical ethical dilemmas. The course combines lectures, small group discussions, case studies, on-line exchanges, and selected readings. *Prereq: PHIL 104; or THEO 175; or PHIL 191.*

PHAS 420. Interpersonal Aspects of Patient Care 2 sem. hrs.

This course is an advanced continuation of Clinical Skills I, PHAS negotiate the behavioral aspects of medicine. It is intended to introduce the skills, knowledge, and sensitivity needed to communicate and intervene effectively in a wide variety of psycho-social situations. The physical examination portion is intended to familiarize and then test the student in advanced examination techniques including muscular-skeletal, neurological, obstetrical, pediatric, and geriatric examination. Appropriate interpretation and documentation are stressed. It is at this time during their academic training that students will be assigned patients in a variety of settings and be asked to complete a history and physical exam.

Prereq: PHAS major; Admitted to professional phase of Physician Assistant studies.

PHAS 421. Complementary and Alternative Medicine 1 sem. hr.

An introduction to the many outpatient and inpatient routine medical procedures. This course will give students an opportunity to develop a multitude of hands-on skills including vein and arterial blood drawing, establishing central lines, maintaining airways, as well as several routine outpatient procedures including foreign body removal, skin biopsy and suturing. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant studies.*

PHAS 422. Clinical Pharmacology 2 sem. hrs.

A focused clinical pharmacology course designed specifically to develop an extensive understanding of the medications routinely used in inpatient and outpatient care. Presented in a case study format using patient scenarios to develop clinical pharmacology knowledge. *Prereq: PHAS major and BISC 435; Admitted to the professional phase of the Physician Assistant Studies.*

PHAS 430. Geriatric Medicine 2 sem. hrs.

An introduction into the biological aspects of aging, latency of disease, organic brain syndromes, cardiac disease, drug prescribing and home health care of the elderly issues necessary for PAs to provide optimal care to elderly patients. *Prereq: Admitted to the professional phase of Physician Assistant Program.*

PHAS 435. Emergency Medicine 1

3 sem. hrs.

Describes a variety of neonatal, pediatric, and adult emergencies including emergency assessment, diagnoses, and treatment. This course is intended to introduce the student to the basic principles of emergency medicine, specifically, the PA's role in triage, assessment, and emergency management. *Prereq: PHAS*

major; Admitted to professional phase of Physician Assistant studies.

PHAS 440. Diagnostics Technology

3 sem. hrs.

This course consists of three distinct class sections: a 12-Lead ECG interpretation section, a radiology section, and a laboratory section. The course provides a broad introduction to these topics that are expanded upon in PHAS 410, 411, 415, and 416. The ECG interpretation section will provide students with a systematic methods of interpreting a 12-Lead ECG with respect to rate, rhythm and blocks, electrical axis determination, hyperlophy (atria and ventricles), ischemia/injury/infarction, and miscellaneous drug, electrolyte, disease, and pacemaker effects. The radiology section will provide students with a systematic method of interpreting common radiographic studies seen in primary care. The laboratory section emphasizes the utilization of laboratory methods for the diagnosis and treatment of disease. The content focuses on those aspects pertinent to the provision of ambulatory, primary care. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant studies.*

PHAS 441. Behavioral Medicine 2 sem. hrs.

An introduction to the skills, knowledge and sensitivity needed to communicate and intervene in a wide variety of psychosocial situations. Topics to be covered: clinical presentation, diagnosis, and management of mental disorders commonly encountered in primary care, personal growth and development, normal growth and development of children and adolescents, human sexuality, psychiatric reactions to disease, counseling skills, and death and dying. Teaching methods to include lectures, discussion, small group discussions, handouts and reading assignments. *Prereq: Admitted to professional phase of Physician Assistant Program.*

PHAS 444. Differential Diagnosis of Disease 2 sem. hrs.

This is an introductory course of the differential diagnosis of disease. It is intended to give DPT students an understanding of the broad range of medical diseases and their various clinical presentations. *Prereq: Admission to the DPT Program.*

PHAS 445. Professional Issues 2 sem. hrs.

A professional issues review. This course emphasizes current issues facing the profession, including legal and ethical problems, and the unique place of PAs within the health care system. It familiarizes students with the history and traditions of the PA profession. This is complemented by information about certification and registration, employment, economics, professional organizations and political/legislative topics. A significant portion of the course confronts ethical issues facing today's non-physician providers. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant studies.*

PHAS 446. Practice Management and Healthcare Systems 3 sem. hrs.

This course familiarizes the student with the ever changing health care marketplace. The course begins with the formation of health insurance companies and rapidly moves to the

current health care arena where the student becomes familiar with large health care networks, prepaid options, and cost effective health care theory. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant Studies.*

PHAS 450. Surgical Principles and Procedures 3 sem. hrs.

An introduction to the role of the physician assistant in surgery and surgical procedures commonly performed in post-operative care. The course employs a system-oriented, problem based approach and clinical information is presented in conjunction with appropriate, correlative lectures or labs in anatomy, physiology, pharmacology, pathology, radiology, laboratory diagnostics, and nutrition. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant studies.*

PHAS 455. Women's Health 3 sem. hrs.

The course explores various gynecological diseases, and the need for preventive medicine in obstetrics and gynecology. It employs a system-oriented, problem based approach and clinical information is presented in conjunction with appropriate, correlative lectures or labs in anatomy, physiology, pharmacology, pathology, radiology, laboratory diagnostics, and nutrition. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant studies.*

PHAS 460. Pediatrics 1 3 sem. hrs.

An introductory pediatrics course which covers problems encountered in the general pediatric population and reinforces basic primary care clinical principles. The course employs a system-oriented, problem based approach and clinical information is presented in conjunction with appropriate, correlative lectures or labs in anatomy, physiology, pharmacology, pathology, radiology, laboratory diagnostics, and nutrition. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant studies.*

PHAS 470. Family Practice 6 sem. hrs.

The eight-week family practice rotation provides students with experience refining their skills in performing the history and physical exam, ordering and interpreting diagnostic tests, and developing treatment plans for the diversity of patients in a typical family practice. The student begins to appreciate the long term impact of health care on patients' lives, and becomes more skilled in preventive health care and the long term management of chronic medical problems. Where possible, students participate in grand rounds, noon conferences and other clinically relevant didactic presentations. A set of cognitive objectives guides student reading in preparation for a written examination at the middle and end of the preceptorship. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant Studies.*

PHAS 471. Internal Medicine 6 sem. hrs.

During the eight-week internal medicine rotation, physician assistant students become a part of an internal medicine practice caring for adult and geriatric patients. Students perform patient history and physical examinations, obtain diagnostic testing and present data to their precepting physician with a proposed differential diagnosis and treatment plan. Students function in a role similar to the

intended role of a practicing physician assistant, including participation in hospital rounds where diagnostic and therapeutic plans for acutely ill patients are discussed, performing and observing various clinical procedures, and preparing written and oral communication about patients. Where possible, students participate in grand rounds, noon conferences and other clinically relevant didactic presentations. A set of cognitive objectives guides student reading in preparation for a written examination at the end of the rotation.

Prereq: PHAS major; Admitted to professional phase of Physician Assistant Studies.

PHAS 472. Surgery 6 sem. hrs.

The eight-week surgical rotation is designed to prepare the student to function as an assistant to the surgeon in the primary or secondary care setting. Students assist in surgical procedures in the operating room, the diagnostic evaluation of surgical patients, with post operative care and with the ambulatory care of surgical patients. Proficiency is to be developed in suturing, incision and drainage, excision and the biopsy of simple wounds and lesions. Where possible, students participate in grand rounds, noon conferences and other clinically relevant didactic presentations. A set of cognitive objectives guides student reading in preparation for a written examination at the end of the rotation. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant Studies.*

PHAS 473. Emergency Medicine 2

6 sem. hrs.

This eight-week rotation allows the student to develop skills in managing patients in the emergency room setting. These skills include those necessary for appropriate triage, stabilization, and initial management of patients with traumatic injuries and illnesses, the management of the less life threatening problems which present to the emergency room, working with the pre-hospital emergency medical service team, and making appropriate secondary referrals. Where possible, students participate in grand rounds, noon conferences and other clinically relevant didactic presentations. A set of cognitive objectives guides student reading in preparation for a written examination at the end of the rotation. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant Studies.*

PHAS 474. Pediatrics 2 3 sem. hrs.

During the four-week pediatric rotation the PA student has an intense exposure to primary care of common pediatric illnesses. These experiences are obtained primarily in the outpatient setting, although students are also exposed to the acute care of hospitalized pediatric patients. The student also develops appreciation for working with many professionals, such as teachers, psychologists, speech and hearing pathologists, nurses and social workers, involved in the care and evaluation of children. Where possible, students participate in grand rounds, noon conferences and other clinically relevant didactic presentations. A set of cognitive objectives guides student reading in preparation for a written examination at the end of the rotation. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant Studies.*

PHAS 475. Geriatrics 3 sem. hrs.

This four-week geriatric rotation is designed to prepare the student to manage primary medical illnesses found in the geriatric population. Students will perform history and physical examinations, obtain diagnostic testing, and present information to precepting physicians with proposed differential diagnosis and treatment plans. Students will evaluate patients both in the outpatient setting as well as inpatient and nursing home facilities. Whenever possible, the student will be exposed to the multidisciplinary team of providers who deliver care in the geriatric environment. When possible, students participate in grand rounds, noon conferences, and other clinically relevant didactic presentations. A set of cognitive objectives guides the student's reading in preparation for written exams at the end of the rotation. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant Studies.*

PHAS 480. Elective 1 3 sem. hrs.

This four-week elective may be obtained at the student's choice in a variety of medical specialty environments. These include, but are not limited to, psychiatric/AODA, orthopedics, oncology, endocrinology, dermatology, OB/GYN, and advanced surgical subspecialties. This elective is intended to offer the student a greater exposure and understanding in specific subspecialties of medicine of the student's interest. The student is encouraged to utilize this elective for sub-specialty exposure. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant Studies.*

PHAS 481. Elective 2 3 sem. hrs.

This four-week elective may be obtained at the student's choice in a variety of medical specialty environments. These include, but are not limited to, psychiatric/AODA, orthopedics, oncology, endocrinology, dermatology, OB/GYN, and advanced surgical subspecialties. This elective is intended to offer the student a greater exposure and understanding in specific subspecialties of medicine of the student's interest. The student is encouraged to utilize this elective for sub-specialty exposure. *Prereq: PHAS major; Admitted to professional phase of Physician Assistant Studies.*

PHAS 482. Patient Advocacy Practicum

2 sem. hrs.

Clinical experience as patient advocate among underserved. *Prereq: Professional Phase Physician Assistant Student.*

PHAS 483. Clinical/Advocacy Practicum

2 sem. hrs.

Clinical experience as patient advocate among underserved. *Prereq: Professional Phase Physician Assistant Student.*

PHAS 485. Remembering Why You Came: Poetry and the Art of Patient Care

1 sem. hr.

Through readings of poetry and short prose, and through the perspectives of experienced clinicians and creative writers, this course explores patient care as a human art. It provides an opportunity for those students committed to a career in healthcare to engage in a personal exploration of the primary place that attentiveness, compassion and creativity

occupy in facing the human challenges of their professions. S/U grade assessment.

PHAS 490. Research Project 6 sem. hrs.

This course is a program-long requirement. The project is initially discussed in PHAS 408: Medical Study and Investigation, is interwoven throughout the remainder of the fall and spring curriculum, and it is to be completed during their final clinical year. The student is to complete a scholarly paper which is a culmination of their entire educational experience. Their work is presented in a poster board forum during the final week of class. Students are encouraged to apply for consideration at the National AAPA annual meeting in May.

Prereq: PHAS major; Admitted to professional phase of Physician Assistant Studies.

PHAS 495. Independent Study 1 sem. hr.

Prereq: Professional Phase Physician Assistant Student.

SPEECH PATHOLOGY AND AUDIOLOGY (SPPA)

Chairperson, Director of M.S. Program and Associate Professor: Korabic

Professor Emeritus: Trotter

Professor: Silverman

Associate Professor Emerita: Moller

Associate Professor: Bhatnagar, Linville

Assistant Professor: Long, Jones

Clinical Instructors: Berman, Erdman, Hallen,

Krueger, Puglisi-Creegan, Wood

SPPA 010. Introduction to Communicative Disorders 3 sem. hrs.

An introduction to the disorders of speech, language, and hearing with emphasis on types, etiology, and symptoms. Offered every term.

SPPA 031. Phonetics 3 sem. hrs.

Patterns of normal, dialectical, and defective production of American English speech sounds, with practical experience in phonetic transcription according to the International Phonetic Alphabet. Offered fall term. *Prereq: SPPA major; or SPPA Minor; or SPLA major; or cons. of dept. ch.*

SPPA 036. Anatomy and Physiology of Speech and Hearing Mechanisms 3 sem. hrs.

Anatomy and physiology of the oral and aural mechanisms. Neural bases for phonation, articulation, breathing, and audition. Offered every term. *Prereq: SPPA major; or SPPA Minor; or SPLA major; or cons. of dept. ch.*

SPPA 134. Speech Science 3 sem. 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. Offered fall term. *Prereq: SPPA major and SPPA 036; or SPLA major and SPPA 036; or cons. of dept. ch.*

SPPA 139. Normal Speech and Language Development 3 sem. hrs.

Overview of general linguistic concepts and their application to the acquisition of language by young children. Theories of language devel-

opment from infancy to early school age. Offered fall term. *Prereq: SPPA major; or SPLA major; or cons. of dept. ch.*

SPPA 140. Language Disorders in Children
3 sem. 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. Offered spring term. *Prereq: SPPA major and SPPA 010 and SPPA 139; or SPLA major and SPPA 010 and SPPA 139; or cons. of dept. ch.*

SPPA 142. Articulation and Phonological Disorders 3 sem. hrs.

Evaluating and treating children and adults with speech disorders. Theories of normal speech sound acquisition are introduced and applied to our understanding of speech disorders. Information on etiological factors and classification of speech disorders. Offered spring term. *Prereq: SPPA 010, 031, 036; SPPA majors only, or cons. of dept. ch. Prereq: SPPA major and SPPA 010 and SPPA 031 and SPPA 036; or SPLA major and SPPA 010 and SPPA 031 and SPPA 036; or cons. of dept. ch.*

SPPA 143. Stuttering and Other Fluency Disorders 3 sem. hrs.

Introduction to the symptomatology, phenomenology, etiology, assessment and management of stuttering and other fluency disorders in children and adults. Offered spring term. *Prereq: SPPA major and SPPA 010; or SPLA major and SPPA 010; or cons. of dept. ch.*

SPPA 147. Introduction to Neurological Disorders of Communication
3 sem. 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. Offered spring term. *Prereq: SPPA major and SPPA 036; or SPLA major and SPPA 036; or cons. of dept. ch.*

SPPA 148. Multicultural Issues for Speech-Language Pathologists 3 sem. 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. Offered annually. *Prereq: Jr. stdng.*

SPPA 151. Clinical Procedures and Management 3 sem. 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. Offered every other term. *Prereq: SPPA major and SPPA 142 and cons. of dept. ch.; or SPLA major and SPPA 142 and cons. of dept. ch.; Plus 25 supervised observation hours (diagnostic or therapy). SPPA 153 must be taken concurrently.*

SPPA 152. Methods and Procedures in School Speech and Hearing Programs
3 sem. hrs.

Speech therapy principles and theories as they apply to public school therapy are presented. Issues relative to school therapy and the function of speech therapy as an Exceptional Education Needs (EEN) program within the total school program are studied. The student is assigned school settings for observation of active school therapy programs. Offered every term. *Prereq: SPPA major and SPPA 151; or SPLA major and SPPA 151; or cons. of dept. ch.; Use of private car possibly required for observation assignments which may be inaccessible to public transportation. Student is responsible for transportation costs.*

SPPA 153. Clinical Practicum—Speech Pathology 1 1 sem. hr.

Offered every term. *Prereq: SPPA major; or SPLA major; or cons. of dept. ch.; SPPA 151 must be taken concurrently. S/U grade assessment.*

SPPA 154. Clinical Practicum—Speech Pathology 2 1 sem. hr.

Offered every term. Performance in this course is assessed using S/U grades. *Prereq: SPPA major and SPPA 153; or SPLA major and SPPA 153; or SPPA 153 and cons. of dept. ch.*

SPPA 158. Diagnostic Methods in Speech-Language Pathology 3 sem. 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. Offered

every term. *Prereq: SPPA major and SPPA 139; or SPLA major and SPPA 139; or cons. of dept. ch.*

SPPA 161. Use of Computers and Other Instrumentation in Speech Pathology
3 sem. hrs.

Practical information about electronics and software is offered that allows clinicians to feel comfortable and be effective using computers and other clinical instrumentation. No previous knowledge of electronics, computers or clinical instrumentation is assumed. *Prereq: SPPA major; or SPLA major; or cons. of dept. ch.*

SPPA 172. Introduction to Audiology
3 sem. 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. Offered spring. *Prereq: SPPA major and SPPA 036 and SPPA 134; or SPLA major and SPPA 036 and SPPA 134; or cons. of dept. ch.*

SPPA 173. Hearing Problems 3 sem. hrs.

Extensive study of hearing disorders and the psychological and social implications of hearing impairment. Habilitation/rehabilitation strategies are discussed. Offered fall term. *Prereq: SPPA major and SPPA 172; or SPLA major and SPPA 172; or cons. of dept. ch.*

SPPA 174. Aural Rehabilitation 3 sem. 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. Offered spring term. *Prereq: SPPA major and SPPA 173; or SPLA major and SPPA 173; or cons. of instr. and cons. of dept. ch.*

SPPA 179. Clinical Practicum—Audiology
1 sem. 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. Offered every term. *Prereq: SPPA major and SPPA 172 and cons. of instr.; or SPLA major and SPPA 172 and cons. of instr.; or cons. of instr. and cons. of dept. ch.; S/U grade assessment.*

SPPA 194. Special Institute/Workshop/Project 1-3 sem. hrs.

Project 1-3 sem. hrs. Offered occasionally.

SPPA 195. Independent Study 1-3 sem. hrs.

Offered every term. *Prereq: cons. of dept. ch.*

SPPA 196. Seminar in Speech Pathology and Audiology 1-3 sem. hrs.

Specific subjects of seminars to be announced in the *Timetable of Classes*. Variable topics. Offered occasionally.

SPPA 199. Senior Thesis 1-3 sem. hrs.

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Offered every term. *Prereq: cons. of dept. ch.*

College of Nursing

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 the driving force for preparation for professional nursing practice. This preparation includes liberal and professional knowledge; clinical, cognitive and leadership skills; and personal and professional values.

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 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 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.

Registered nurse applicants follow general admission procedures. Transcripts from nursing programs and/or colleges must be sent to the Office of Undergraduate Admissions. The applicant must be a graduate of a program accredited by the National League for Nursing Accrediting Commission or Commission on Collegiate Nursing Education, have a cumulative Q.P.A. of 2.500 or higher and be currently licensed to practice as a registered nurse. Transfer of credit will be based on individual evaluation.

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 quality 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. Beyond the 36 credit UCCS requirements, the College of Nursing core requirements include an additional 18 credits. The nursing major consists of 72 credits. There are 5 credits remaining as general electives.

| | |
|---|--------------------|
| Rhetoric (R) | 6 credits |
| ENGL 001 and ENGL 002 ARE REQUIRED. | |
| Mathematical Reasoning (MR) | 3 credits |
| All UCCS courses accepted; Statistics recommended for students considering graduate education. | |
| Individual and Social Behavior (ISB) | 9 credits |
| PSYC 001, PSYC 078, and SOCI 021 ARE REQUIRED. | |
| Diverse Cultures (DC) | 3 credits |
| HEAL 025* IS REQUIRED. | |
| Literature and Performing Arts (LPA) | 3 credits |
| All UCCS courses accepted for college curriculum credit. | |
| Histories of Cultures and Societies (HCS) | 3 credits |
| All UCCS courses accepted for college curriculum credit. | |
| Science and Nature (SN) | 14 credits |
| BISC 006, 007, 015,* and 115 ARE REQUIRED. | |
| Human Nature and Ethics (HNE) | 7 credits |
| PHIL 050, PHIL 104, and 1 credit course in Health Care Ethics ARE REQUIRED. | |
| Theology (T) | 6 credits |
| THEO 001 IS REQUIRED, and all UCCS courses accepted for remaining 3 credits. | |
| General Electives | 5-6 credits |
| Nursing Major | 72 credits |
| NURS 015, 050, 055, 100, 105, 110, 120, 130/131, 135, 138/139, 142/143, 160/161, 171/172, 178/179, 184, 188, any NURS elective, and HEAL 025, 045, 140. | |

*HEAL 025 and BISC 015 satisfy both UCCS and college curriculum requirements.

▲ Indicates UCCS courses throughout the bulletin.

NURSING/PSYCHOLOGY DOUBLE MAJOR

The College of Nursing offers a double major to meet the interests of students who want to combine nursing and psychology. The program can be completed in four years. The curriculum plan indicating course requirements and sequencing is available from the College of Nursing, Clark Hall, (414) 288-3809.

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.

NURSING AND DOCTORATE IN PHYSICAL THERAPY

The College of Nursing offers a program option to meet the needs of students who wish to combine their nursing studies with preparation for the doctorate in physical therapy. The program plan indicating course requirements and sequencing is available from the College of Nursing, Clark Hall, (414) 288-3809.

NURSING AND PREMEDICAL STUDIES

The College of Nursing offers a program option to meet the needs of students who wish to combine their nursing studies with preparation for medical school. The program plan indicating course requirements and sequencing is available from the College of Nursing, Clark Hall, (414) 288-3809.

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

GENERAL REQUIREMENTS

The following general requirements must be met for progression into and through the clinical portion of the nursing major.

- a. A grade of at least a CD is required in the following courses:
 - BISC 006 - Chemistry for Health Professions
 - BISC 007 - Biochemistry
 - BISC 015 - Principles of Human Anatomy and Physiology
 - PSYC 001 - General Psychology
- b. A grade of C or better is required in the following courses:
 - BISC 115 Microbiology
 - PSYC 078 Introduction to Life-span Developmental Psychology
 - PHIL 104 Theory of Ethics
 - SOCI 021 The Family (sociology)
 - PHIL 192 Health Care Ethics
- c. A grade of C or better (or S where applicable) in all required NURS and HEAL courses.
- d. Students must have a 2.000 cumulative quality point average to enroll in NURS 050 or NURS 055 and to continue to progress in the nursing program.
- e. Any I, X, IX grade which is not removed by the required time (see academic calendar) will be viewed as an F.
- f. 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.
- g. No required cognate or required nursing course may be repeated more than one time.
- h. Permission to repeat a required nursing course must be formally requested from the associate dean for undergraduate programs by the student.
- i. It is required that all senior students complete an external standardized comprehensive nursing examination. The examination is a condition of graduation.
- j. Students must meet health requirements as specified in the *Health Requirements for Undergraduate Students* found in this bulletin.
- k. Health reports and CPR certification must be on file in the office of the associate dean for undergraduate programs prior to attendance in classes for which these requirements are needed.
- l. Standardized examinations are to be taken as required by the Undergraduate Program and Curriculum Committee.
- m. The college has additional limitations for substitute repeat courses.

PROGRESSION INTO NURS 050

The following required courses or their equivalents must be completed prior to entering NURS 050: BISC 006 Chemistry for the Health Professions, BISC 007 Biochemistry, BISC 015 Principles of Anatomy, and Physiology, PSYC 001 General Psychology, NURS 015 Dimensions of Professional Nursing.

PROGRESSION INTO NURS 055

The following required courses or their equivalents must be completed prior to entering NURS 055: NURS 050 Health Assessment, BISC 115 Microbiology and HEAL 045 Normal and Therapeutic Nutrition.

PROGRESSION INTO NURS 105 THROUGH NURS 143

The following required courses or their equivalents must be completed prior to entering courses NURS 105 through NURS 143: NURS 110 Pharmacotherapeutics for Nursing Practice, NURS 055 Foundations of Nursing Practice, NURS 100 Pathophysiology 1, HEAL 025 Culture and Health, PSYC 078 Introduction to Life-span Developmental Psychology, SOCI 021 The Family.

PROGRESSION INTO NURS 160 OR HIGHER NURSING COURSES

The following required cognate and nursing courses or their equivalents must be completed prior to entering NURS 160 or higher nursing courses: HEAL 140 Primary Health Care Concepts, NURS 105 Pathophysiology 2, NURS 120 Introduction to Nursing Research, NURS 130 Nursing Care of Adults/Theory, NURS 131 Nursing Care of Adults/Practicum, NURS 138 Childbearing Family Nursing/Theory, NURS 139 Childbearing Family Nursing/Practicum, NURS 142 Mental Health Nursing/Theory, NURS 143 Mental Health Nursing/Practicum.

The remaining required cognate and nursing courses or their equivalents which must be completed include: PHIL 104 Theory of Ethics, PHIL 192 Health Care Ethics, NURS 160 Nursing Care of Acutely Ill Adults/Theory, NURS 161 Nursing Care of Acutely Ill Adults/Practicum, NURS 171 Family Centered Nursing of Children/Theory, NURS 172 Family Centered Nursing of Children/Practicum, NURS 178 Nursing of Communities/Theory, NURS 179 Nursing of Communities/Practicum, NURS 184 Synthesis Practicum, and NURS 188 Nursing Leadership.

WITHDRAWAL FROM THE NURSING PROGRAM

The following criteria are used in recommending that a student should withdraw from the nursing program:

- a. If the student has earned less than the required grades in two required courses as defined in the general progression requirements.
- b. 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.
- c. 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.

ATTENDANCE

Attendance is mandatory in all scheduled classes and practica. In the event of absence, progress and continuation in the course will be considered individually. The reason for absence, academic performance of the student, past record of absenteeism, and other relevant factors will be considered. The student is required to provide prior notice to faculty of absence or tardiness. No student will be allowed to accumulate excessive absences before intervention by the faculty. A student may be asked to withdraw from a course with a laboratory or clinical practicum if the following absences or tardiness are exceeded.

Absence—Two absences from scheduled laboratory or clinical experience regardless of time involved or clinical allocation.

All clinical time is essential and absences will need to be made up. The faculty member will decide what learning assignments or experiences will be required of the student to achieve the course objectives. Make-up experiences will be arranged. Students are responsible for their own transportation to and from all clinical facilities.

A student may be asked to withdraw from a non-clinical nursing course if the following maximums are exceeded:

Absence

In a two-credit course, maximum of three class hours.

In a three-credit course, maximum of four class hours.

In a four-credit course, maximum of five class hours.

For additional information, see the attendance policy located in the University section of this bulletin.

APPEALS PROCEDURE

GRADE APPEALS

A student may appeal a final course grade that he or she believes to be in error. The student must exhaust all possibilities of resolving the problem with the pertinent instructor. If this does not lead to resolution, the student may initiate, in writing, the formal procedure for appealing the grade to the dean stating the reason it is believed the grade should be changed. The dean will appoint an ad hoc appeals committee to consider the appeal in order to assure a fair consideration of the student's appeal.

TERMINATION FROM THE PROGRAM

If a student does not meet criteria for progression, a subcommittee of the Undergraduate Program and Curriculum Committee will recommend to the dean that the student 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 committee 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 30 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 dean. If the student is dissatisfied with this decision, the final recourse within the College of Nursing is a petition to the dean.

APPROVAL FOR SUMMER SESSION STUDY

Students who plan to take courses in summer school at another institution are required to obtain the approval from the associate dean for undergraduate programs 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 will be accepted by Marquette University. Approval forms may be obtained at the college office. Transcripts must be sent to the Marquette University Office of the Registrar after successfully completing the course with a minimum grade of C.

SPECIAL AND HEALTH REQUIREMENTS

Within one year prior to beginning practicum courses, students must meet the following requirements:

A. Health assessment and physical examination.

1. A health history including a history of communicable disease and immunizations,
2. A physical examination by a physician or registered nurse practitioner indicating whether the student's health status is satisfactory to continue in the nursing program, and
3. A statement from the student regarding his/her communicable disease status will be on file.

B. Rubella (German Measles).

Each student must have documentation of immunity to rubella. A student not having immunity should be immunized upon the advice of his/her physician or nurse practitioner.

C. Rubeola (Measles).

A student born after 1956 must have either documentation of a positive rubeola (measles) antibody titer or documentation of rubeola immunization since January 1, 1980.

D. Chickenpox.

Since nursing students may be exposed to chickenpox, each student should be aware whether he/she has had chickenpox and is therefore immune. A student who has no record or recollection of having had chickenpox is advised to be screened for immunity.

E. Tetanus.

Each student must have documentation of tetanus within the last 10 years.

F. Latex Allergy.

Students will provide documentation if a latex allergy exists.

In the term prior to enrolling in nursing courses with clinical practicum (NURS 050 and subsequent nursing courses), the following health requirements must be completed:

A. All students must submit evidence of a negative tuberculin skin test (or negative chest x-ray approved by their physician, if the tine test was positive). A student exposed to a person with communicable tuberculosis must inform the associate dean for undergraduate programs and will be referred to Student Health Service for follow-up. (Tuberculin testing and evidence of a negative result is required annually.)

B. Hepatitis B Virus (HBV)

Each student must complete the vaccination series for HBV. (A student wishing an exemption from this requirement must complete a waiver form which will be retained in his/her student file.)

Health requirements for RN students must be completed prior to enrollment in NURS 179 or 191.

CPR CERTIFICATION

Students must provide evidence of current CPR certification, including infant, child, adult (two person and obstructed airway resuscitation), prior to the first clinical experience in the sophomore year. This certification must be maintained throughout the remainder of the student's program through annual recertification. Documentation of such certification from the American Heart Association is required and must be submitted to the Office of the Associate Dean for Undergraduate Programs, Room 251. (Red Cross not accepted.) Questions regarding CPR certification should be directed to this office, 288-3809.

ACCREDITING COMMISSION

Verification of accreditation status may be obtained from: National League for Nursing Accrediting Commission; 350 Hudson Street; New York, NY 10014; (212) 989-9393 and the Commission on Collegiate Nursing Education; 1 DuPont Circle NW; Washington, DC 20036-1120; (202) 887-6791.

STUDENT ORGANIZATIONS

COLLEGE ORGANIZATION AND PROFESSIONAL ASSOCIATION

The Marquette University College of Nursing Student Nurses Association 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 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 and marked achievement in the field of nursing.

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.

CURRICULA INFORMATION

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 | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|--|-----------|
| BISC 006* Chemistry for the Health Professions | 3 | BISC 007* Biochemistry | 3 |
| ENGL 001 Rhetoric and Composition 1 | 3 | BISC 015* Principles of Human Anatomy and Physiology | 5 |
| PSYC 001 General Psychology | 3 | ENGL 002 Rhetoric and Composition 2 | 3 |
| THEO 001 Introduction to Theology | 3 | ELEC General elective | 3 |
| NURS 015 Dimensions of Professional Nursing | 3 | PHIL 050 Philosophy of Human Nature | 3 |
| | <hr/> 15 | | <hr/> 17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|--|-----------|
| PSYC 078 Intro to Life-Span Development | 3 | NURS 055* Foundations of Nursing Practice | 3 |
| BISC 115* Human Microbiology | 3 | NURS 100* Pathophysiology 1 | 3 |
| HEAL 025 Culture and Health | 3 | NURS 110 Pharmacotherapeutics for Nursing Practice | 3 |
| HEAL 045* Normal & Therapeutic Nutrition | 3 | SOCI 021 The Family | 3 |
| NURS 050* Health Assessment | 3 | HCS UCCS HCS | 3 |
| | <hr/> 15 | | <hr/> 15 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|--|-----------|
| NURS 105* Pathophysiology 2 | 3 | NURS 138 Childbearing Family Nursing—Theory | 2 |
| NURS 120 Intro to Nursing Research | 2 | NURS 139 Childbearing Family Nursing—Practicum | 3 |
| NURS 130 Nursing Care of Adults/Theory | 3 | NURS 142 Mental Health Nursing—Theory | 2 |
| NURS 131 Nursing Care of Adults/Practicum | 3 | NURS 143 Mental Health Nursing—Practicum | 3 |
| NURS 135 Essentials of Gerontological Nursing | 2 | HEAL 140 Primary Health Care Concepts | 3 |
| PHIL 104 Theory of Ethics | 3 | MATH UCCS MR. | 3 |
| PHIL 192 Health Care Ethics | 1 | | |
| | <hr/> 17 | | <hr/> 16 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|---|-------------|
| NURS 171 Family Centered Nursing of Children—Theory | 2 | NURS 160 Nursing Care of Acutely Ill Adults—Theory | 3 |
| NURS 172 Family Centered Nursing of Children—Practicum | 3 | NURS 161 Nursing Care of Acutely Ill Adults—Practicum | 3 |
| NURS 178 Nursing of Communities/Theory | 2 | NURS 184 Synthesis Practicum | 3 |
| NURS 179 Nursing of Communities/Practicum | 3 | NURS 188 Nursing Leadership | 3 |
| LPA UCCS LPA | 3 | THEO UCCS T | 3 |
| NURS Nursing or Health elective | 3 | ELEC General elective | 2/3 |
| | <hr/> 16 | | <hr/> 17/18 |

TOTAL CREDITS 128
(Nursing = 72 and Non-nursing = 56)

* Courses offered only in the semester indicated.

BACHELOR OF SCIENCE IN NURSING: REGISTERED NURSE OPTION

The following courses are required. Equivalent courses may be accepted in transfer if they have been completed at an accredited college or university with a grade of C or better.

NURSING REQUIREMENTS

REQUIRED NURSING COURSES - PHASE I

All RN/BSN students are required to complete Phase I nursing courses.

| | Credits |
|--|----------------|
| HEAL 025* Culture and Health | 3 |
| NURS 120 Introduction to Nursing Research | 2 |
| NURS 162 Health Assessment for Registered Nurses | 3 |
| NURS 173 Professional Issues in Nursing | 3 |
| Total | 11 |

NURSING CREDITS BY ADVANCED COURSE VALIDATION

Upon completion of Phase I courses, as well as graduation from an NLN accredited diploma or associate degree program and possession of a valid RN license, credits for the following courses will be awarded and placed on the student's transcript.

| | Credits |
|--|----------------|
| NURS 015 Dimensions of Professional Nursing | 3 |
| HEAL 045 Normal and Therapeutic Nutrition | 3 |
| NURS 055 Foundations of Nursing Practice | 3 |
| NURS 100 Pathophysiology 1 | 3 |
| NURS 105 Pathophysiology 2 | 3 |
| NURS 110 Pharmacotherapeutics of Nursing Practice | 3 |
| NURS 130 Nursing Care of Adults—Theory | 3 |
| NURS 131 Nursing Care of Adults—Practicum | 3 |
| NURS 138 Childbearing Family Nursing—Theory | 2 |
| NURS 139 Childbearing Family Nursing—Practicum | 3 |
| NURS 142 Mental Health Nursing—Theory | 2 |
| NURS 143 Mental Health Nursing—Practicum | 3 |
| NURS 160 Nursing Care of Acutely Ill Adults—Theory | 3 |
| NURS 161 Nursing Care of Acutely Ill Adults—Practicum | 3 |
| NURS 171 Family-centered Nursing of Children—Theory | 2 |
| NURS 172 Family-centered Nursing of Children—Practicum | 3 |
| Total | 45 |

REQUIRED NURSING COURSES - PHASE II

All RN/BSN students begin Phase II courses after completing Phase I and receiving credit for course validation.

| | Credits |
|---|----------------|
| NURS 178 Nursing of Communities—Theory | 2 |
| NURS 179 Nursing of Communities—Practicum | 3 |
| NURS 188 Nursing Leadership | 3 |
| NURS 191 Professional Nursing—Practicum | 3 |
| Nursing elective | 3 |
| Total | 14 |

ARTS AND SCIENCES

BIOMEDICAL SCIENCES

| | Credits |
|--|----------------|
| BISC 015* Principles of Human Anatomy and Physiology | 5 |
| BISC 115 Human Microbiology | 3 |
| BISC 006 Chemistry for Health Professions | 3 |
| BISC 007 Biochemistry for Health Professions | 3 |
| Total | 14 |

PSYCHO-SOCIAL SCIENCES

| | |
|---|---|
| PSYC 001* General Psychology | 3 |
| PSYC 078 Intro to Life-Span Development Psychology | 3 |
| SOCI 021 The Family | 3 |

| | |
|--------------|----------|
| Total | 9 |
|--------------|----------|

ENGLISH

| | |
|---|---|
| ENGL 001 and 002* Rhetoric and Composition 1 & 2 | 6 |
| Literature/Performing Arts* | 3 |

| | |
|--------------|----------|
| Total | 9 |
|--------------|----------|

HISTORY

| | |
|-----------------------------|---|
| History elective* | 3 |
|-----------------------------|---|

MATHEMATICS

| | |
|--------------------------|---|
| Math elective* | 3 |
|--------------------------|---|

*Meets University Core of Common Studies requirement

PHILOSOPHY

| | |
|--|---|
| PHIL 050* Philosophy of Human Nature | 3 |
| PHIL 104* Theory of Ethics | 3 |
| PHIL 192 Health Care Ethics | 3 |

| | |
|--------------|----------|
| Total | 9 |
|--------------|----------|

THEOLOGY

| | |
|--|---|
| THEO 001* Introduction to Theology | 3 |
| Theology elective* | 3 |

| | |
|--------------|----------|
| Total | 6 |
|--------------|----------|

GENERAL ELECTIVES

| | |
|--------------|------------|
| Total | 5/6 |
|--------------|------------|

| | |
|---|--------------------|
| Total Credits Required for Graduation: | 128 credits |
|---|--------------------|

This program may be completed on a full-time or part-time schedule. An accelerated RN to BSN to MSN program is available to qualified students.

MASTER OF SCIENCE IN NURSING

Concentrations are offered in nursing administration and advanced practice nursing: nurse-midwifery, children, adults, older adults and acute care nurse practitioner.

Additional information about the master of science in nursing program will be found in the *Graduate Bulletin*.

**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 nursing administration or advanced nursing practice roles in: adult, older adult, pediatrics or nurse-midwifery.

ADMISSION REQUIREMENTS

1. Baccalaureate degree
2. Undergraduate Q.P.A. of 3.000 or greater
3. Graduate Record Examination
4. Completion of three recommendation forms
5. Completion of the following prerequisite courses with grade of C or better:

| | |
|---|-------------|
| Anatomy and Physiology | 5-6 credits |
| Chemistry/Biochemistry/Biology/Microbiology | 5-6 credits |
| Behavioral Sciences (e.g., psychology, sociology) | 3 credits |
| Statistics (including inferential) | 3 credits |

MINOR IN HEALTH STUDIES

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 | | Credits |
|----------------|---|----------------|
| HEAL 025 | Culture and Health | 3 |
| HEAL 045 | Normal and Therapeutic Nutrition | 3 |
| HEAL 120 | Personal Health | 2/3 |
| HEAL 122 | Women's Health | 3 |
| HEAL 123 | Men's Health | 3 |
| HEAL 130 | Substance Abuse | 3 |
| HEAL 131 | Urban Health | 3 |
| HEAL 150 | Alternative and Complementary Therapies | 3 |
| HEAL 198 | Topics in Health Care | 2-3 |
| GROUP 2 | | |
| HEAL 140 | Primary Health Care Concepts | 3 |
| HEAL 141 | Introduction to Health Care Systems | 3 |
| HEAL 144 | International Health | 3 |
| HEAL 155 | Environmental Health | 3 |
| SOCI 133 | Medical Sociology | 3 |
| PHIL 192 | Health Care Ethics | 3 |
| CMST 146 | Health Communication | 3 |
| JOUR 173 | Health and Science Journalism | 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.

COURSE DESCRIPTIONS

NURSING (NURS)

Dean and Professor: Acord

Associate Dean for Graduate Programs and Professor: Miller

Associate Dean for Undergraduate Programs and Assistant Professor: Lough

Professor: Bull, Fehring, Schank (Emeritus), Wake (and Provost)

Associate Professor: Bunkers, Frenn, Hanson, Krejci, Kunert, Tobin, VandeVusse, Weis, Weiss, Wilson, Winters

Assistant Professor: Belknap, DeVon, Haglund, Malin, Ramey, Ryan

Clinical Associate Professor: O'Brien, Schoneman, Shaw

Clinical Assistant Professor: Bratt, Dressler, Gosline, Ivantic-Doucette, Kosmoski-Goepfert, Kowatsch, McShane

Clinical Instructor: Salentine

NURS 015. Dimensions of Professional Nursing 3 sem. hrs.

An introduction to the discipline of professional nursing with an emphasis on caring and therapeutic relationships. Offered every term. *Prereq: NURS major.*

NURS 050. Health Assessment 3 sem. 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. Offered every term. *Prereq: NURS major and BISC 006 and BISC 007 and BISC 015 and BISC 115 which may be taken concurrently and HEAL 045 which may be taken concurrently and NURS 015 which may be taken concurrently.*

NURS 055. Foundations of Nursing Practice 3 sem. 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 and BISC 006 and BISC 007 and BISC 015 and BISC 115 which may be taken concurrently and HEAL 045 which may be taken concurrently and NURS 015 which may be taken concurrently.*

NURS 100. Pathophysiology 1 3 sem. 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. Offered annually. *Prereq: NURS major and BISC 006 and BISC 007 and BISC 015 and NURS 110 which may be taken concurrently and PSYC 001.*

NURS 101. International Study in Nursing 0-3 sem. hrs.

Structural travel and study programs in International Nursing. Program includes continuous enrollment for students studying abroad in non-Marquette programs and/or special advising, reading, and required paper(s).

Prereq: NURS major and Consent Required; Consent of Associate Dean. Approved for full-time study at another college/university abroad, but will NOT be certified as full-time by Marquette University.

NURS 105. Pathophysiology 2 3 sem. 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. Offered annually. *Prereq: NURS major and NURS 100 and PSYC 078*

NURS 108. Individual Study and Practice 1-3 sem. hrs.

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: NURS major and cons. of instr.*

NURS 110. Pharmacotherapeutics for Nursing Practice 3 sem. 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 007 and BISC 015.*

NURS 120. Introduction to Nursing Research 2 sem. hrs.

Overview of research in nursing and its application to nursing practice. *Prereq: Jr. stndg. and NURS major; May be taken by nursing graduate students.*

NURS 124. Special Institute 1-3 sem. hrs.
In depth study of concepts and research related to a specialty area in nursing. Offered occasionally. *Prereq: NURS major.*

NURS 130. Nursing Care of Adults—Theory 3 sem. 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 and HEAL 045 and NURS 055 and NURS 100 and NURS 110; Prereq. or coreq: NURS 105 and either HEAL 025 or 140. Must be taken concurrently with NURS 131.*

NURS 131. Nursing Care of Adults—Practicum 3 sem. 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 130 which must be taken concurrently; S/U grade assessment.*

NURS 135. Essentials of Gerontological Nursing 2 sem. 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. *Prereq: NURS major and NURS 050 and NURS 055 and NURS 100 and NURS 110; and NURS 105 which may be taken concurrently.*

NURS 138. Childbearing Family Nursing—Theory 2 sem. hrs.

Study of human responses 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. Offered every term. HEAL 140 (which may be taken concurrently), HEAL 025, 045, NURS 055, 100, 110; SOCI 021; PSYC 078. Must be taken concurrently with NURS 139.

NURS 139. Childbearing Family Nursing—Practicum 3 sem. 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 and NURS 138 which must be taken concurrently; S/U grade assessment.*

NURS 142. Mental Health Nursing—Theory 2 sem. 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; and HEAL 025, HEAL 045, NURS 055, NURS 100, NURS 110, PSYC 078, SOCI 021 and HEAL 140 which may be taken concurrently and NURS 143 which must be taken concurrently.*

NURS 143. Mental Health Nursing—Practicum 3 sem. 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 and NURS 142 which must be taken concurrently; S/U grade assessment.*

NURS 160. Nursing Care of the Acutely Ill Adult—Theory 3 sem. 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; and HEAL 140, NURS 120, NURS 130, NURS 131, NURS 138, NURS 139, NURS 142, NURS 143, NURS 161 which must be taken concurrently.*

NURS 161. Nursing Care of the Acutely Ill Adult—Practicum 3 sem. 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 and NURS 160 which must be taken concurrently; S/U grade assessment.*

NURS 162. Health Assessment for Registered Nurses 3 sem. hrs.

Learning and using assessment skills in systematically gathering, validating, and labeling health status, developmental status and self-care deficits. Offered occasionally. *Prereq: NURS major; R.N. student or nursing graduate student or with permission of the Instructor.*

NURS 164. Process of Patient/Family Teaching 3 sem. hrs.

An analysis of the teaching-learning process as it is applied to teaching patients and families in a health care setting. Discussion of the most appropriate media and methods used in various health teaching situations. Offered occasionally. *Prereq: Sr. stndg. and NURS major; or second semester Jrs.*

NURS 165. Oncology Nursing 3 sem. hrs.

In-depth exploration of nursing needs of the patient with cancer, designed for the student with basic understanding of the pathophysiology of cancer and the classical treatment modalities. Offered occasionally. *Prereq: Jr. stndg. and NURS major; or cons. of instr.; Second semester junior or R.N. or Consent of Instructor.*

NURS 166. Critical Care Nursing Practicum 3 sem. hrs.

Focuses on application of specialized care given to clients with critical health care needs; includes examination of the physical, psychosocial and spiritual needs of clients and families and how various settings impinge on those needs. Offered occasionally. *Prereq: Sr. stndg. and NURS major and NURS 167 which may be taken concurrently and cons. of instr.; S/U grade assessment.*

NURS 167. Critical Care Nursing 3 sem. hrs.

Integration of pathophysiologic concepts and psychosocial variables unique to caring for critically ill adults. Offered occasionally. *Prereq: Sr. stndg. and NURS major; or R.N. student.*

NURS 168. AIDS Care 3 sem. hrs.

Comprehensive analysis of issues relating to HIV infection and AIDS including epidemiology, pathophysiology, prevention strategies and nursing care of the client throughout the infection continuum. *Prereq: NURS major and NURS 055 and NURS 105; or cons. of instr.*

NURS 170. Trends and Issues in Nursing

2 sem. hrs.

Forces influencing nursing including: health care systems and technology, legal issues, and professional movements. Offered occasionally. *Prereq: Jr. stndg. and NURS major.*

NURS 171. Family Centered Nursing of Children—Theory 2 sem. hrs.

Family centered nursing of children and adolescents in diverse populations. Focus on health promotion, maintenance, acute and chronic health problems. *Prereq: Sr. stndg. and NURS major and HEAL140 and NURS 130 and NURS 131 and NURS 138 and NURS 139 and NURS 142 and NURS 143 and NURS 172 which must be taken concurrently.*

NURS 172. Family Centered Nursing of Children—Practicum 3 sem. hrs.

Emphasis on application of theory and the planning and provision of care to healthy and ill children. *Prereq: Sr. stndg. and NURS major and NURS 171 which must be taken concurrently; S/U grade assessment.*

NURS 173. Professional Issues in Nursing 3 sem. hrs.

The impact on professional nursing of external and internal forces including law, ethics, education, and nursing process. Offered occasionally. *Prereq: NURS major; R.N. students only.*

NURS 178. Nursing of Communities—Theory 2 sem. 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. *Prereq: Sr. stndg. and NURS major and HEAL140 and NURS 130 and NURS 131 and NURS 138 and NURS 139 and NURS 142 and NURS 143 and NURS 179 which must be taken concurrently.*

NURS 179. Nursing of Communities—Practicum 3 sem. 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. stndg. and NURS major and NURS 178 which must be taken concurrently; S/U grade assessment.*

NURS 184. Synthesis Practicum 3 sem. 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. stndg. and NURS major and HEAL140 and NURS 120 and NURS 130 and NURS 131 and NURS 138 and NURS 139 and NURS 142 and NURS 143; S/U grade assessment.*

NURS 188. Nursing Leadership—Theory 3 sem. 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. stndg. and NURS major and HEAL140 and NURS 120 and NURS 130 and NURS 131 and NURS 138 and NURS 139 and NURS 142 and NURS 143; Must be taken concurrently with either NURS 161, 172, or 179.*

NURS 190. Nursing Undergraduate**International Exchange** 0 sem. hrs.

Study abroad as part of an international student exchange program. Upon approval students are enrolled in a college or university abroad as a full-time student for one term or one year. Course credits transfer to Marquette. *Prereq: NURS major and Consent Required; Consent of Associate Dean.*

NURS 191. Professional Nursing Practicum 3 sem. hrs.

Guided experience in caring for clients with complex health problems in a variety of settings. Focus on the professional nurse's role as a provider and manager of client care with emphasis on nursing process. Includes seminar and ninety hours of clinical practice. Offered occasionally. *Prereq: Jr. stndg. and NURS major; R.N. students only. S/U grade assessment.*

NURS 195. Independent Study 1-3 sem. hrs.

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: NURS major and cons. of instr.*

NURS 198. Topics in Nursing 2-3 sem. hrs.

Special topics in nursing and health care as identified in the *Timetable of Classes*. Offered occasionally. *Prereq: NURS major.*

HEALTH (HEAL)

The following HEALTH (HEAL) courses are offered by the College of Nursing and open to all students of the university.

▲ HEAL 025. Culture and Health 3 sem. 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. Offered every semester.

HEAL 045. Normal and Therapeutic Nutrition 3 sem. hrs.

Nutritional aspects of health promotion. Therapeutic dietary needs of clients with various health status deviations. Offered annually. *Prereq: Soph. stndg. and BISC 006 and BISC 007 and BISC 015; Not open for credit to students who have completed BISC 110.*

HEAL 120. Personal Health 2-3 sem. hrs.
An overview of current health issues which impact on the individual. The focus is on self-responsibility and decision-making for one's own health. Offered occasionally.

HEAL 122. Women's Health 3 sem. 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. Offered occasionally.

HEAL 123. Men's Health 3 sem. hrs.
A self-management approach to health maintenance, physical fitness and psychosocial changes throughout the life cycle pertinent to men.

HEAL 130. Substance Abuse 3 sem. hrs.
A comprehensive overview of substance abuse throughout the life span. Addresses the physiological, psychological, sociological and spiritual perspectives. Offered occasionally.

HEAL 131. Urban Health 3 sem. hrs.
Exploration of social, organizational, political and environmental factors impacting the health of urban populations. Offered occasionally. *Prereq: Jr. stndg; or cons. of instr.*

HEAL 140. Primary Health Care Concepts 3 sem. 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: Jr. stndg.*

HEAL 141. Introduction to Health Care Systems 3 sem. hrs.

Concepts of health, health care, care delivery systems, and health professional roles. Offered occasionally.

HEAL 144. International Health 3 sem. 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 150. Alternative and Complementary Therapies 3 sem. 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 155. Environmental Health 3 sem. hrs.
Study of biological, psychosocial, physical, and chemical threats affecting individuals and communities. Examines person-environment interactions, ethical, social, and legal perspectives. *Prereq: Jr. stndg.*

HEAL 160. Epidemiology 3 sem. hrs.
Analysis of occurrence and patterns of disease in populations including prevention and control strategies.

HEAL 164. Natural Family Planning 3 sem. hrs.

Physiological, behavioral, and spiritual aspects important to teaching and using natural family planning. *Prereq: Jr. stndg.*

HEAL 165. Natural Family Planning Practicum 3 sem. hrs.

Practical application of theory and skills for teaching natural family planning. *Prereq: Jr. stndg.*

HEAL 198. Topics in Health Care 2-3 sem. hrs.

Special topics in health care as identified in the *Timetable of Classes*. Offered occasionally.

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College of Professional Studies

The College of Professional Studies is designed to serve the busy lifestyles of working adults. This premier college for adult learners offers convenient weekend and weeknight classes with a curriculum focused on the changing needs of a changing society. Classes are held at three locations: Kenosha, Milwaukee and Waukesha.

For individuals pursuing or advancing their careers in or aspiring to leadership roles in business, social and professional organizations, this college offers its graduates the credentials needed for career advancement. Adult learners will find the College of Professional Studies an excellent way to ease into today's business world. Becoming a Marquette University student offers you the advantage of a quality education you can put to immediate use. In keeping with Marquette's Jesuit mission, the college educates the whole person in a value-centered and professionally oriented applications-based curriculum.

The mission of the college is to provide accessible, quality education that empowers non-traditional students to become life-long learners.

DEGREES OFFERED

Marquette University confers the degree of bachelor of arts 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 on those students who have satisfactorily completed requirements for the organization and leadership major.

ADMISSION REQUIREMENTS

All students, freshman or advanced standing, applying to the College of Professional Studies must submit a completed application, writing sample, 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 admissions requirements listed in the University 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:

TRANSFER CREDITS

Transfer credits will be accepted on the basis on their relevance to the requirements of the program. Up to 63 credits may be accepted from accredited two-year community and technical colleges and up to 90 credits from accredited four-year colleges and universities.

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 section of this bulletin for a listing of approved exams.

OPTION TO TAKE OTHER COURSES

Should schedules permit, students may enroll in traditional day and evening classes. Please consult the *Schedule of Classes* or see your academic adviser.

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 Q.P.A. in their Marquette work.
3. Students must complete a minimum of 36 credit hours of upper division course work.
4. A minimum 15 credits in the major and at least nine credits in the minor, if declared, normally must be completed at Marquette University.
5. 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.
6. Students may present credits but not quality points from another institution toward graduation requirements.
7. It is the candidate's responsibility to meet all university academic, financial and administrative requirements and procedures as outlined in this bulletin.
8. 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 for adult students at Marquette University 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 24 credits as follows:

| KNOWLEDGE AREA | COMMON CORE CREDITS | PLUS ADDITIONAL COLLEGE CURRICULUM 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 |

▲ Indicates UCCS courses throughout the bulletin.

Additional Skills courses required for the College Curriculum

| | |
|--|---|
| PRST 010 Principle of Liberal Studies | 3 |
| ENGL 105 Writing for the Professions | 3 |
| CMST 155 Business and Professional Speaking | 3 |
| PRST 029 Introduction to Information Systems | 3 |

Optional Skills course may be required for the College Curriculum

| | |
|------------------------------|---|
| PRST 001 Foundations Seminar | 3 |
|------------------------------|---|

Total University Common Core and College Curriculum

| | |
|------------------------------------|---------------|
| Credit Hours Required | .57-60 |
| Major | .30-35 |
| Minor (Optional) | .18-21 |
| Elective Credits | .10-24 |

In addition to the graduation requirements listed, each student within the College of Professional Studies must complete course work in specific discipline areas. These areas include:

FOUNDATIONS SEMINAR (3 credit hours)

For increased success some new students may be required to complete PRST 001. This course is considered an elective.

PRINCIPLES OF LIBERAL STUDIES (3 credit hours)

All students are required to complete PRST 010 during their first two years at Marquette University. Please see course description for further information.

INTRODUCTION TO INFORMATION SYSTEMS (3 credit hours)

All students required to complete PRST 029 Introduction to Information Systems.

ENGLISH/COMPOSITION/COMMUNICATION (12 credit hours)

All students must complete six credit hours of English composition as well as six credit hours of communications-based course for a total of 12 credit hours. The specific course that all College of Professional Studies students need to complete this requirement are ENGL 001 and ENGL 002, Rhetoric and Composition 1 and 2*; ENGL 105, Writing for the Professions; and CMST 155 Business and Professional Speaking.

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 001 and 002 Growth of Western Civilization 1 and 2*.

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 022 Survey of English Literature 1 * and ENGL 032 Survey of American Literature 1*.

MATHEMATICS (6 credit hours)

All students must complete six credit hours of mathematics, of which three credit hours must be PRST 060 Research and Statistical Methods *. The remaining credit hours selected depend upon the student's individual needs.

| <i>Course</i> | <i>Credit hours</i> |
|---|---------------------|
| MATH 020 College Algebra | 3 |
| PRST 020 Foundations of Applied Mathematics | 3 |

NATURAL SCIENCE (3 credit hours)

All students must complete PRST 018 Aspects of Modern Science * for three credit hours. Additional and/or different natural science courses may be approved by college.

PHILOSOPHY (6 credit hours)

All student must complete PHIL 050 Philosophy of Human Nature * and one upper division course for a total of six credit hours. PHIL 104 Theory of Ethics* is suggested as upper division selection.

SOCIAL-BEHAVIORAL SCIENCES (6 credit hours)

All students must complete six credit hours of social-behavioral science, of which three credits hours must be PSYC 001 General Psychology*. Students may choose one of the following courses for the remaining three credit hours.

| <i>Course</i> | <i>Credit hours</i> |
|---------------------------------------|---------------------|
| SOCI 001 Principles of Sociology* | 3 |
| ANTH 001 Introductory Anthropology* | 3 |
| CRLS 051 Introduction to Criminology* | 3 |
| POSC 020 American Politics* | 3 |

THEOLOGY (6 credit hours)

All students must complete THEO 001 Introduction to Theology* and one second level theology course (THEO 100-119) for a total of six credit hours. THEO 115 Christian Discipleship* is suggested as second level theology selection.

NOTE: “*” Courses fulfill University Core of Common Studies as well as college curriculum.

Please consult the Core of Common Studies Web site at www.marquette.edu/core for additional and updated information on the University Core of Common Studies.

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, organization and leadership, professional communication and psychology as well as minors in criminology and law studies, organization and leadership, professional communication, psychology, interdisciplinary fields, and the professional minor. For interdisciplinary field minors please contact the college for current information.

The following are the courses required for each major and minor. Course descriptions for criminology and law studies, professional communications and psychology are listed in the respective area of this bulletin. Course descriptions for organization and leadership and the professional minor will follow this section.

Criminology and Law Studies (CRLS)

Major: Requires 30 credit hours, 10 courses in CRLS including CRLS 051, 152, 156, 157 (or 159), 168, 186, 187 and three of the following five courses: CRLS 163, 167, 181, 193, 198.

Minor: Requires 18 credit hours, six courses in CRLS including CRLS 051.

(Course descriptions are found in this bulletin in the criminology and law studies section of the College of Arts and Sciences.)

Professional Communication (PRCO)

Major: Requires 30 credit hours, including CMST 010, 052, 053, 131, 154 and five of these six courses, CMST 132, 134, 140, 165, ADPR 008 and JOUR 166.

Minor: Requires 21 credit hours, including CMST 010, 052, 131, 134, 154, COMM 166 and one three-credit course in CMST.

(Course descriptions are found in this bulletin in the communication studies section of the College of Communication.)

Psychology (PSYC)

Major: Requires 35 credit hours including PSYC 001, 060, 090 and at least one course from at least five the following eight content areas: developmental (101, 103); social (111); learning (121, 122); assessment (127, 131); history and systems (128); personality theories (132); physiological (129, 135); and abnormal (137).

Minor: Requires 18 credit hours; six courses in psychology including PSYC 001.

(Course descriptions are found in this bulletin in the psychology section of the College of Arts and Sciences.)

Professional Minor (PRMI) (MINOR ONLY)

Minor: Requires 21 credit hours, seven courses in organization and leadership, ORLE 032, 034, 036, 038, 129, 136 and 138.

Organization and Leadership (ORLE)

Major: Requires 33 credit hours. All students must complete the core leadership courses along with one concentration. The concentrations include Organizations & Organizational Development, Leaders in Context, Professional Communication, Society, Information Systems and Commerce.

Core Leadership Courses: Eighteen hours of core leadership courses consisting of ORLE 090, 123, 135, 146, 197 and PRST 160 are required. In addition to each of these eighteen hours, one of the following concentrations must be completed.

Concentrations:

Organizations & Organizational Development: ORLE 091, 132, 133, 134 and one of the following courses: ORLE 136, 130, 131, 122.

Leadership: Liberal Studies Perspectives: ORLE 141, 142, 143, 144, 145.

Professional Communication: CMST 010, 052, ORLE 139 and two of the following courses: CMST 131, 132, 140 and 165.

Social Context: ORLE 139, 143, 144, 150 and 151.

Information Systems: ORLE 129 and 4 of the following courses: ORLE 170, 172, 174, 176, 178 and 179.

Commerce: ORLE 034, 036, 037, 038 and 100.

Minor: Requires 21 credit hours, ORLE 090, 123, 135, 146 and nine credit hours of upper division ORLE coursework.

NOTE: Any student electing the ORLE major with the Professional Communication concentration cannot declare Professional Communication as a minor or a second major. Conversely, students may not select the Professional Communication concentration in the ORLE major if the Professional Communication major or minor have been declared. Also, any student electing the ORLE major with the Commerce concentration cannot declare a Professional Minor.

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.

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 module, 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 to continue to enroll. 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 or 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 module. 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.

ATTENDANCE POLICY

Student attendance in each class per eight-week module 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 a 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 or more absences from a course. In the event of a withdrawal from a course the grade of W will appear on the official transcript.

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 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, even though they are registered through another college, department, or program at the university. For specific details of the application of this policy, please contact the college office.

INCOMPLETES

A student who does not complete course assignments, tests, quizzes, presentations, etc., prior to the end of the module must 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.

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. Please see Repeated Courses 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 module immediately following the module 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.

MAILING AND FAXING ASSIGNMENTS TO INSTRUCTORS

Students may use the U.S. Postal Service to submit assignments to their instructors, only if the instructors agree to this arrangement prior to mailing. 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.

The same guidelines apply to faxed assignments. Each student should call the receiver of the faxed assignment to verify it was received.

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. The instructional assistant is responsible for facilitating and proctoring the examination. This make-up examination can be done during the review session time or at a time both the instructional assistant and the student can meet.

Instances in which a student is absent from a final examination and no prior arrangements were made will be referred to the college office. All students must submit a written request to the dean to reschedule an examination.

PRE-ASSIGNMENTS

Prior to each eight-week module students receive syllabi and textbook lists for the courses they are taking. Students are expected to complete the assignments for the first class and come prepared to participate.

For updated and current information check the College of Professional Studies Web site at www.marquette.edu/adultlearning/degree_programs/timetable.

REMOVAL OF INCOMPLETE GRADES

The dates to complete and submit all course work for a class that a student originally received an incomplete grade is listed in the front section of this bulletin. Any student that must remove an incomplete has until 5 p.m. of the deadline date to submit all coursework for the class, this includes completing all papers, homework assignments, quizzes and tests. Students should contact the college office for proper procedures for incomplete grades.

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.

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 www.pin.ed.gov.
2. Complete your FAFSA. The Free Application for Federal Student Aid or FAFSA is available online at 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 in writing 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, please call the Office of Student Financial Aid at (414) 288-7390. The FAFSA application is still available in a paper format, which we will send to you.

FEDERAL AID SOURCES

Federal Pell Grant—Recipients must show financial need, be enrolled at least half-time, and not hold a prior bachelor's degree. Annual amounts range from \$400-\$4,050.

Wisconsin Tuition Grant—Recipients must be Wisconsin residents, show financial need, be enrolled at least half-time, not hold a prior bachelor's degree, and be certified as eligible by the Wisconsin State Higher Education Aids Board. Wisconsin Tuition Grant may be received for a maximum of 10 terms. Annual amounts range from \$250-\$2,500.

William D. Ford Federal Direct (Stafford) Loan—The Stafford Loan Program has two components: The subsidized loan (which accrues no interest while the student is in school) is for those who demonstrate financial need; the unsubsidized loan (on which interest accrues from the time of disbursement) is for those who do not demonstrate need or who do have need but wish to borrow more than the subsidized loan can offer them.

Both loans have a variable interest rate set at T-bill plus 1.7% while in school, grace, or deferments; and T-bill plus 2.3% in repayment (not to exceed 8.25%). Repayment begins six months

after the student is no longer enrolled half-time. Annual loan limits vary according to the student's grade level.

Independent undergraduates can borrow up to \$6,625 for the first academic year, \$7,500 for the second academic year and \$10,500 for each of the final two years of study. The exact amount will vary depending upon financial need.

ADDITIONAL RESOURCES

PRIVATE SCHOLARSHIPS

Check with your school or public library for outside sources of financial aid. In addition, the Office of Student Financial Aid has a number of books on this topic. Many students and families use the Internet to gather financial aid information. We recommend the following links: www.marquette.edu/financialaid/fastweb.htm.

A free scholarship search resource. Begin by entering data about yourself and your course of study to create a scholarship mailbox. Information in your mailbox will be automatically updated for you, giving you the names, addresses, and details of the scholarships for which you may be eligible. Suggested form letters to each scholarship organization are also included. www.finaid.org.

A good starting point and general resource for financial aid information, including loans, grants, scholarships and work. Look here for lists of answers to frequently asked questions about financial aid, tips on how to avoid scholarship scams, and general information on financial aid policies and procedures. Many other financial aid Web site can be accessed from here.

STUDY GRANTS

The College of Professional Studies has study grants available for adult learners at Marquette. Grants are available for students who have a cumulative quality point of 2.250 or better.

Students applying for the study grants must have applied for financial aid by filing the FAFSA form, and must demonstrate financial need. Applications, deadline dates and additional eligibility information can be obtained by contacting the college office at (414) 288-3153.

ALTERNATIVE LOANS

If you have applied for financial aid and find that you still may need additional resources to cover your educational costs, the Office of Student Financial Aid may have some resources to help. There are a number of alternative loans available, through various private banks, that may meet your needs.

These loans may often be borrowed in addition to the federal grants and loans you are already receiving. Typically, these loans require that you be employed, or have an employed, credit-worthy co-signer. Terms vary, and most will allow you to defer repayment until after graduation, although interest will accrue during the in-school period.

For information on alternative loan options, contact the Office of Student Financial Aid, (414) 288-7390, or visit their Web site at www.marquette.edu/financialaid.

SPECIAL ACADEMIC PROGRAMS

To further meet the needs of the working adult in Southeastern Wisconsin, the College of Professional Studies has expanded its outreach in three distinct venues, which enhances the existing college and the Part-time Studies Program.

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 who is located on Marquette's campus in the 1212 Building, 1212 W. Wisconsin Ave., Room 103 or call (414) 288-3153.

WAUKESHA COUNTY

The College of Professional Studies offers courses at the Country Inn Hotel and Conference Center in Pewaukee, Wis. The Country Inn Hotel and Conference Center is located off Interstate 94, exit Hwy T to Golf Road in Waukesha County. For information on this scheduling option, contact the adult student adviser assigned to students interested in the Waukesha site at (414) 288-3153.

PART-TIME STUDIES PROGRAM

The Part-time Studies Program, in conjunction with the various colleges at Marquette University, offers an array of undergraduate degrees. If a student has the flexibility to enroll in day-time courses, the majority of Marquette University degree programs are available to them. However, many working adults are restricted to evening or weekend programs. If you are interested in the evening degree options, please consult an adviser in the College of Professional Studies.

The College of Professional Studies provides a professionally-trained academic advising staff to assist the student in the Part-time Studies Program. The adult student adviser is a resource to guide the student in planning, clarifying and achieving specific educational goals. For information regarding the Part-time Studies Program, call (414) 288-7499.

COURSE DESCRIPTIONS

PROFESSIONAL STUDIES (PRST)

PRST 001. Foundations Seminar 3 sem. 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. *Prereq: Enrolled in Professional Studies; S/U grade assessment.*

PRST 010. Principles of Liberal Studies 3 sem. hrs.

This course is an 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 and ENGL 001 and ENGL 002; and four additional courses from the university's common core. This course is required for all students in the College of Professional Studies. It is recommended that all students complete this course prior to the completion of their sophomore year.*

▲ PRST 018. Aspects of Modern Science 3 sem. 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 Organization and Leadership Program students only. *Prereq: Enrolled in Professional Studies.*

PRST 020. Foundations of Applied Mathematics 3 sem. 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 029. Introduction to Information Systems 3 sem. 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 060. Research and Statistical Methods 3 sem. 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 020 recommended.*

PRST 160. Research and Inquiry Methods 3 sem. hrs.

Research and Inquiry Methods is an upper-level graduate 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: PRST 060 or equivalent.*

ORGANIZATION AND LEADERSHIP (ORLE)

Faculty for the Organization and Leadership Program are drawn from the Colleges of Arts and Sciences, Business Administration and Communication.

ORLE 032. Accounting Principles and Applications 3 sem. 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 and MATH 020 or equivalent.*

ORLE 034. Economic Theory and Practice 3 sem. 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 and MATH 020 or equivalent.*

ORLE 036. Principles of Financial Management 3 sem. 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 and MATH 020 or equivalent.*

ORLE 037. Personal and Family Financial Planning 3 sem. hrs.

The course focuses on the financial planning needs of individuals, families and working professionals. Specific emphasis is given to contemporary issues facing individuals and house-

holds 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.*

ORLE 038. Marketing Concepts and E-commerce 3 sem. hrs.

This course 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.*

ORLE 090. History and Theories of Leadership 3 sem. 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.*

ORLE 091. Leading Teams and Groups 3 sem. 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.*

ORLE 100. Global Commerce 3 sem. hrs.

The course will 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. Coursework 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. Prerequisites: Complete 2 of the following: ORLE 034, ORLE 036, ORLE 037, ORLE 038.

ORLE 111. Social Psychological Principles Applied to Leadership 3 sem. 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.

ORLE 120. Issues in Organizational Leadership 1 3 sem. 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 ORLE 090.*

ORLE 121. Issues in Organizational Leadership 2 3 sem. hrs.

Prereq: Enrolled in Professional Studies and ORLE 090.

ORLE 122. Consultation Theory and Practice 3 sem. hrs.

This course 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: ORLE 133.*

ORLE 123. Ethics in Leadership 3 sem. hrs.

This is 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 ORLE 090.*

ORLE 129. Information Systems for Management 3 sem. 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 029; Suggest completion of 3 of the classes ORLE 032, 034, 036, 038.*

ORLE 130. Future Directions of Organizations 3 sem. hrs.

This course examines current issues facing organizations in planning and managing change efforts and how leadership styles impact the organization. It 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 ORLE 133.*

ORLE 131. Facets of Organizational Development and Change 3 sem. hrs.

This course will address specific aspects of organizational development. Career development, organizational assessment and appraisal, and program evaluation will be further explored. Students will examine theoretical and practical perspectives, approaches, and skills. The larger political, administrative and ethical issues will be examined. *Prereq: ORLE 133.*

ORLE 132. Organizational Behavior 3 sem. 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 and ORLE 091*

ORLE 133. Organization Development and Change 3 sem. hrs.

This course reviews the broad background of organizational development (OD) and examine 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 and ORLE 134.*

ORLE 134. Organizational Processes 3 sem. 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 commu-

nication 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 and ORLE 132.*

▲ORLE 135. The Culturally Diverse Organization 3 sem. 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 and ORLE 091.*

ORLE 136. Principles of Human Resource 3 sem. 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.*

ORLE 137. Organizational Strategies 3 sem. hrs.

This course 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 is examined. The dynamics of strategic change in the complex global economy and at the corporate level are studied. *Prereq: Enrolled in Professional Studies and ORLE 134.*

ORLE 138. Leading Continuous Quality Improvement 3 sem. 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 060 or equivalent.*

ORLE 139. Communicating Leadership: Issues and Applications 3 sem. hrs.

This course 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 CMST 010 and ORLE 090.*

ORLE 140. Interpersonal Conflict**Management** 3 sem. 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.*

ORLE 141. Leaders in Literature 3 sem. 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 002.*

ORLE 142. Historical Leadership during World Conflicts 3 sem. hrs.

This course 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 001 and HIST 002 and ORLE 090.*

ORLE 143. Leaders in Social Movements 3 sem. hrs.

This course will focus 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 ORLE 090 and ORLE 091.*

ORLE 144. Political Leadership: Theory and Reality 3 sem. 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.*

ORLE 145. Integrity in Leadership-Religious Perspectives 3 sem. hrs.

This course will consider 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 001.*

ORLE 146. Systems Thinking 3 sem. 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 casual 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.*

ORLE 150. Leadership in Not-for-Profit Organizations 3 sem. 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: ORLE 090.*

ORLE 151. Grass-roots Organizations and Leadership 3 sem. 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 grass-roots organizations provides a unique opportunity to examine the value of grass-roots organizations in American life. What social and/or political events give rise to grass-roots 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: ORLE 090.*

ORLE 170. Computer Programming 3 sem. 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: PRST 020 and PRST 029.*

ORLE 172. Introduction to Database Management Systems 3 sem. 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 029.*

ORLE 174. Data Communications and Networks 3 sem. 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: PRST 029.*

ORLE 176. Electronic Commerce 3 sem. 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 029.*

ORLE 178. Information Systems Analysis, Design and Implementation 3 sem. 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: PRST 029.*

ORLE 179. Multimedia 3 sem. 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: PRST 029.*

ORLE 195. Independent Study 1-3 sem. hrs. Offered every quinmester. *Prereq: Enrolled in Professional Studies and Consent Required; Consent of Dean of College of Professional Studies.*

ORLE 197. Integrating Seminar 3 sem. 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 coursework required. *Prereq: Enrolled in Professional Studies.*

ORLE 198. Topics in Organization and Leadership 1-3 sem. hrs.

Special topics selected from one of the various within organization and or leadership. Specific topics to be announced in the *Timetable of*

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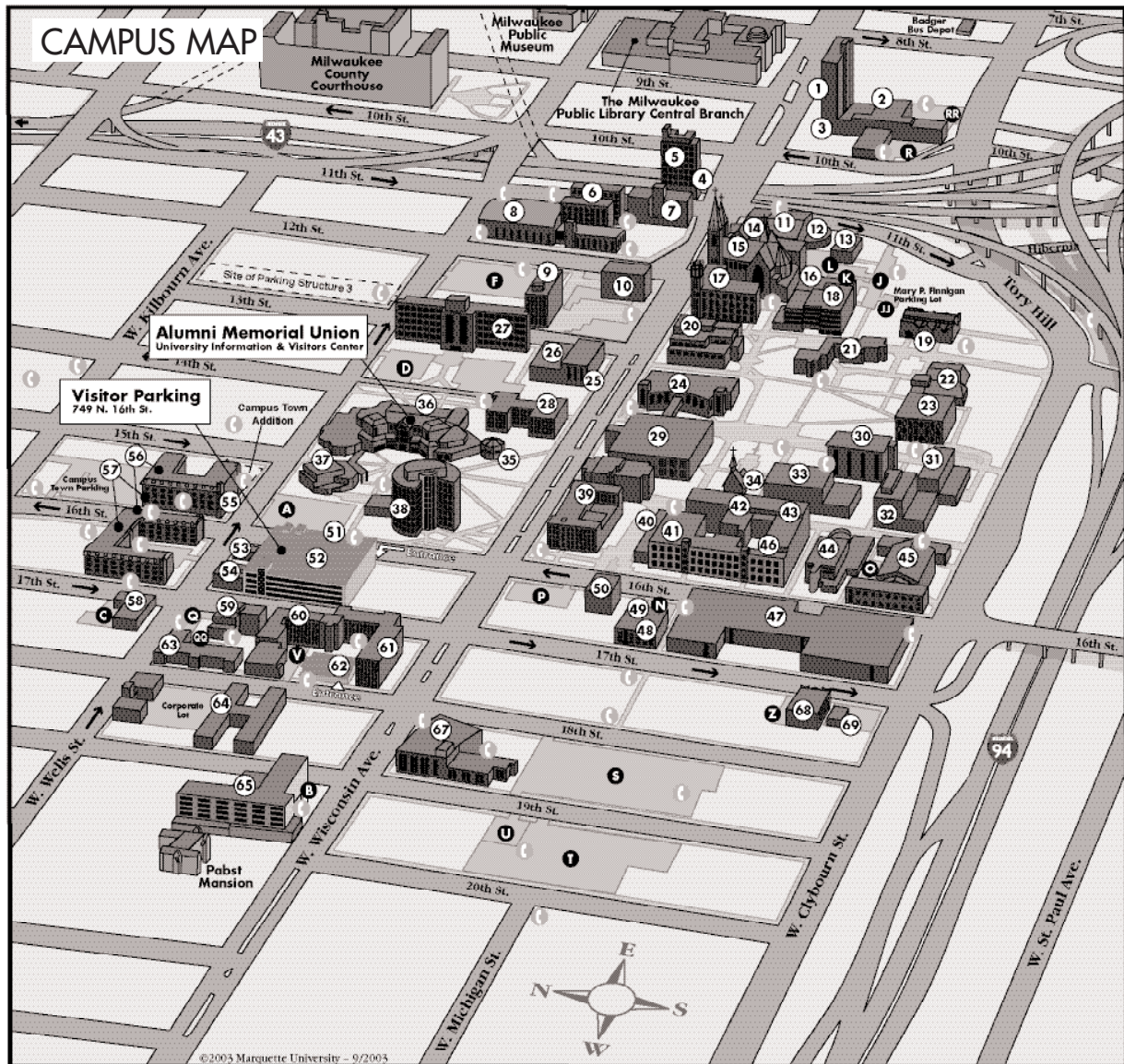
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Academic/Administrative Buildings

- 7 707 Building
- 10 1212 Building, College of Professional Studies
- 58 1700 Building
- 60 Academic Support Facility
- 49 Carmel Hall East
- 4 M. Carpenter Tower
- 44 Emory T. Clark Hall, College of Nursing
- 21 Charles L. Coughlin Hall
- 20 Katharine Reed Cudahy Hall
- 41 Old Dental School
- 67 School of Dentistry
- 39 Patrick E. Haggerty Hall, College of Engineering, & Olin Engineering Center
- 63 Helfaer Building
- 26 Holthusen Hall, Graduate School
- 28 Jesuit Residence
- 14 Robert A. Johnston Hall, College of Communication
- 59 Krueger Parent & Child Center
- 23 Lalumiere Language Hall
- 17 Marquette Hall, College of Arts and Sciences
- 50 Monitor Hall
- 13 O'Hara Hall
- 51 Public Safety/ Transportation Services
- 40 Schroeder Complex Annex
- 42 Walter Schroeder Health Sciences & Education Complex, College of Health Sciences, School of Education

- 11 Sensenbrenner Hall, Law School
- 31 Service Building
- 69 Service Garage
- 18 David A. Straz, Jr., Hall, College of Business Administration
- 3 David A. Straz, Jr., Tower
- 43 Student Health Service
- 30 Todd Wehr Chemistry
- 32 Wehr Life Sciences
- 33 William Wehr Physics

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- 35 The Chapel of The Holy Family
- 15 Gesu Church, a Jesuit-sponsored parish
- 16 Gesu Parish Center
- 34 St. Joan of Arc Chapel

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- 29 Memorial Library
- 24 John P. Raynor, S.J., Library
- 46 Science Library

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- 36 Alumni Memorial Union, University Information & Visitors Center
- 57 Campus Town

- 45 Gymnasium
- 19 Patrick & Beatrice Haggerty Museum of Art
- 47 Helfaer Tennis Stadium & Recreation Center
- 22 Evan P. & Marion Helfaer Theatre
- 8 Al McGuire Center
- 2 Rec Plex
- 55 Union Sports Annex
- 70 Valley Fields
- 25 Varsity Theatre
- 37 Tony & Lucille Weasler Auditorium

Residence Halls

- 5 M. Carpenter Tower
- 6 Cobeen Hall
- Haggerty House
- 910 N. Renee Row (not shown)
- 65 Mashuda Hall
- 38 McCormick Hall
- 64 O'Donnell Hall
- 27 Schroeder Hall
- 68 South Hall
- 1 Straz Tower

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- 9 Abbottsford Apartments
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- 54 Gilman Building
- 61 Humphrey Hall Apartments

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