

MARQUETTE UNIVERSITY

Undergraduate Bulletin



MARQUETTE
UNIVERSITY

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2009 - 2010

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The University

HOW TO USE THIS BULLETIN

This 2009-2010 *Marquette University Undergraduate Bulletin* governs curricular requirements of all students entering Marquette University undergraduate programs as freshmen or as advanced standing students during the 2008–2009 academic year. Academic policy and course changes will apply to all students as of the date they become effective, regardless of whether they were in effect at the time the student initially enrolled at Marquette. Each entering student 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 1957-58, Marquette became for a short time the largest Catholic university in the nation.

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

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

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

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

MISSION STATEMENT

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

Excellence

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

Faith

As a Catholic university, we are committed to the unfettered pursuit of truth under the mutually illuminating powers of human intelligence and Christian faith. Our Catholic identity is expressed in our choices of curricula, our sponsorship of programs and activities devoted to the cultivation of our religious character, our ecumenical outlook, and our support of Catholic

beliefs and values. Precisely because Catholicism at its best seeks to be inclusive, we are open to all who share our mission and seek the truth about God and the world, and we are firmly committed to academic freedom as the necessary precondition for that search. We welcome and benefit enormously from the diversity of seekers within our ranks, even as we freely choose and celebrate our own Catholic identity.

Leadership

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

Service

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

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

VISION STATEMENT

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

STATEMENT ON HUMAN DIGNITY AND DIVERSITY

As a Catholic, Jesuit university, Marquette recognizes and cherishes the dignity of each individual regardless of age, culture, faith, ethnicity, race, gender, sexual orientation, language, disability or social class. Precisely because Catholicism at its best seeks to be inclusive, we are open to all who share our mission and seek the truth about God and the world. Through our admissions and employment policies and practices, our curricular and co-curricular offerings, and our welcoming and caring campus environment, Marquette seeks to become a more diverse and inclusive academic community dedicated to the promotion of justice.

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

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

National Council for Accreditation of Teacher Education, National Strength and Conditioning Association, Wisconsin Department of Public Instruction, Wisconsin State Board of Nursing.

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

2009–2010 ACADEMIC CALENDAR

FALL 2009

Session 1 8/31/09 to 12/19/09
 Session 2 8/31/09 to 10/24/09
 Session 3 9/14/09 to 11/7/09
 Session 4 10/26/09 to 12/19/09
 Session 5 11/9/09 to 1/16/10
 Session 6 8/31/09 to 1/16/10
 Session 7 12/21/09 to 1/16/10

SPRING 2010

Session 1 1/18/10 to 5/15/10
 Session 2 1/18/10 to 3/13/10
 Session 3 3/15/10 to 5/15/10
 Session 4 1/18/10 to 6/18/10

SUMMER 2010

Session 1 5/24/10 to 7/3/10
 Session 2 7/6/10 to 8/14/10
 Session 3 6/1/10 to 7/31/10
 Session 4 5/17/10 to 7/3/10
 Session 5 7/6/10 to 8/21/10
 Session 6 5/17/10 to 8/21/10

For detailed current calendars and schedules go to www.marquette.edu/registrar/calendar.

ACADEMIC PROGRAMS

UNDERGRADUATE PROGRAMS

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

UNDERGRADUATE LEARNING OUTCOMES

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

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

Information about how the university assesses student abilities and preparation for these learning outcomes can be found at www.marquette.edu/assessment. This web site also contains outcomes data from 2006 to present.

GRADUATE SCHOOL

The Graduate School, in partnership with several undergraduate colleges, offers bachelor's to master's programs. As of this printing, the colleges of Engineering, Health Sciences (speech-language pathology), Arts and Sciences (international affairs and political science) and Nursing are participating. For information, contact the undergraduate college.

Marquette University's Graduate School offers nearly 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 site at www.marquette.edu/grad/current_bulletin.shtml.

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. It also operates two community clinics in Milwaukee as well as providing care at several sites throughout Wisconsin. The School of Dentistry provides a modern educational program which emphasizes development of critical thinking and clinical skills that are necessary for the practice of general dentistry. The curriculum also emphasizes service to the community as one of its focal points. The goal is to provide dental students a comprehensive education that incorporates a multidisciplinary evidence-based model of providing oral health care. Early clinical experiences, integration of biomedical knowledge and case-oriented teaching methods help facilitate this process.

In addition, the School provides continuing education programs to practicing dentists that allow them to stay up-to-date on all aspects of the profession. These programs are provided in a variety of formats. They include courses which emphasize scientific and technical advances in delivery of patient care, as well as hands-on courses focused on delivery techniques. Courses are offered on campus and at remote sites including some distance-learning.

The School of Dentistry grants a doctor of dental surgery degree. In addition, the school offers graduate programs in the specialties of endodontics, orthodontics and prosthodontics as well as a certificate program in advanced education in general dentistry and a master's program in dental biomaterials. The School of Dentistry also offers a program leading to a graduate certificate in gerontology.

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, and 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 J.D. graduates are admitted to the Wisconsin Bar through the diploma privilege. The Law School recently established an LL.M. (Master of Laws) degree program in sports law for foreign attorneys.

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 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 and seminars in business and management as well as preparation courses for the Law School Admission Test (LSAT), Essentials of Human Resource Management Certificate, Professional in Human Resources (PHR) and Senior Professional in Human Resources (SPHR), and Certified Financial Planner. Short-term, non-credit programs are available days and evenings throughout the year. All programs are held on the Marquette campus. For information on courses call (414) 288-3153; fax (414) 288-3298; e-mail register@marquette.edu or write to the College of Professional Studies; Marquette University; 707 Building, Room 403; 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. The College of Professional Studies coordinates a range of academic, administrative and student services for working adults.

SUMMER STUDIES

Summer Studies offers undergraduate, graduate 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 admissions and course offering information, visit the Summer Studies Web site at www.marquette.edu/registrar.

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 biological sciences (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, visit www.marquette.edu/explore.

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, visit www.marquette.edu/explore.

WASHINGTON, D.C., INTERNSHIP PROGRAM

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

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

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

STUDY ABROAD PROGRAMS

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

STUDY ABROAD LEARNING OUTCOMES

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

1. Appreciate others he/she encounters from different backgrounds.
2. Describe the basic structures of the society of the host country (government, economy and commerce, health care, education, social services, religion, etc.)
3. Recognize one's self and cultural context in relation to others.
4. Demonstrate a commitment to social responsibility in the global sphere.

5. Function effectively within a new environment or system.
6. Demonstrate a level of facility communicating with people from other ethnic and/or linguistic backgrounds.

PROGRAMS

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

Students are encouraged to inquire about study abroad opportunities as early as freshman year with the Office of International Education and within their colleges. Students should regularly refer to the list of ever expanding available programs on the web at www.marquette.edu/oie

POLICIES AND PROCEDURES:

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

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

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 advising, specialized courses, and tutoring, as well as personal and career counseling. Students may apply to EOP-SSS when they apply for admission to Marquette University, after completion of the Marquette application, or even after beginning studies at Marquette. The majority of EOP-SSS students enroll as entering freshmen and participate in the EOP-SSS summer program. For application information, call (414) 288-7593.

EOP McNAIR SCHOLARS PROGRAM

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

EOP PRECOLLEGE PROGRAMS

In addition to Student Support Services and McNair Scholars, EOP administers two 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 International Education (OIE) provides advanced English language courses for students of other language backgrounds whose academic success at Marquette requires additional formal instruction in English reading, writing, listening, and speaking skills. All students are welcome to take these English courses, although the English Language Placement Test is required to determine appropriate placement. For incoming students whose evidence of English language ability does not assure adequate proficiency, the English Language Placement Test is mandatory and the results will be used to assign students to any appropriate courses. English language (ESLP) courses are offered in both the fall and spring terms. There are also sections

of English 1001 and 1002 designated for ESLP students. Up to six credits of ESLP course work may be counted toward degree requirements in all undergraduate colleges except Engineering. Contact the Office of International Education; Alumni Memorial Union, 425; (414) 288-7289 for information.

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

General Qualifications:

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

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

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

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

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

Leadership Laboratory: Leadership laboratory is a cadet-centered activity. It is largely cadet planned and directed, in line with the premise that it provides leadership training experience that will improve a cadet's ability to perform as an Air Force officer. The freshman and sophomore leadership laboratory program introduces Air Force customs and courtesies, drill and ceremonies, wearing the uniform, career opportunities in the Air Force, education and training benefits, and life and work of an Air Force officer. Experiences include preparing the cadet for individual, squadron and flight movements in drill and ceremonies and preparation for the field training assignment prior to the junior year.

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

AFROTC College Scholarship Program: This program provides scholarships to selected students participating in AFROTC. While participating in AFROTC, students receive a monthly stipend

starting at \$300 per month, along with paid tuition, fees, laboratory expenses and a fixed reimbursement for textbooks.

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

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

High school students can apply for this scholarship late in their junior year or early in their senior year. High school students may get pre-applicant questionnaires by asking their guidance counselor or by writing or telephoning the nearest Air Force recruiting office. Completed pre-application questionnaires should be sent as soon as possible (to meet the earliest selection board) but will not be accepted if sent after December 1 the year before entering college. An online scholarship application is available at 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 and Leadership was established under the auspices of the Klingler 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 Leader Development and Assessment Course 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 Leader Development and Assessment Course during the summer between junior and senior years. Students receive monetary compensation for attending this camp.

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

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

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

Once the scholarship benefits are applied in the sophomore year, Marquette University will still provide \$5,000 annually toward tuition cap or university housing and board.

Prospective students interested in a four-year Reserve Officers' Training Corps Scholarship should start the application process during their junior and senior year of high school. Four-year scholarship applications are only available online (www.armyrotc.com) or by calling Cadet Command at (800) USA-ROTC for a paper application. Current college students may apply for four-, three-, and two-year on-campus scholarships through the Marquette Department of Military Science.

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

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

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

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

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

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

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

For course descriptions, course credit and other information see the Arts and Sciences section of this bulletin. For complete information, contact the Department of Military Science; Gymnasium, A100; Marquette University; P.O. Box 1881; Milwaukee, WI 53201-1881 or call either (414) 288-7195 or (800) 563-7339.

NAVAL SCIENCE

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

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

All NROTC students fall into one of two broad categories: scholarship or non-scholarship (college program). Some students will enter Marquette with a four-year scholarship earned on

a competitive basis while still in high school. Scholarships are for full tuition, fees, a textbook stipend, laboratory expenses and include a subsistence stipend of \$250 to \$400 per month, depending on class year. In addition, Marquette provides incentive funds for scholarship winners. Four-year scholarship winners receive about \$7,000 per year toward university housing and board.

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

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

Marine Corps option students, scholarship and college program, are required to complete four of the above naval science class requirements, along with two Marine Corps naval science courses that are taught their junior and senior years. Calculus and physics are not required unless they are a prerequisite of the major field of study. Students are required to take American Military History (HIST 3118) or National Security Policy (POSC 4376). 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. However, no application will be considered for any applicant with an outstanding balance of \$3,000 or more already owed the university.

After reviewing the admission procedures and requirements, prospective students should apply online at www.marquette.edu/explore.

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.

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

ADMISSION TO THE FRESHMAN CLASS

GENERAL NORMS

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

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

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). Students taking the ACT must also submit scores for the optional writing section of the exam. Information concerning these examinations can be obtained from high school counselors or by requesting information from the respective organizations: 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.

Transfer applicants are considered on a rolling basis for all programs except nursing. Transfer applicants should refer to the admissions Web site (www.marquette.edu/explore) for transfer admissions deadlines and details.

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

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

To begin the application process, non-U.S. citizens and permanent residents should contact the Office of International Education (OIE). The address is Alumni Memorial Union, 425; Marquette University; P.O. Box 1881; Milwaukee, WI 53201-1881, U.S.A. Students can also reach OIE by telephone at (414) 288-7289, by fax at (414) 288-3701, and by e-mail at world@marquette.edu. It is important to remember that the application process can take from one week to many months, depending primarily upon when the applicant can provide the required materials. An application, as well as a complete list of required materials, can also be found at the OIE Web site at www.marquette.edu/oie.

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

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) must submit to the Office of the Registrar an Application for Readmission. This readmission will not be considered for any former student with an outstanding balance of \$3,000 or more already owed the university, or who has an active Student Development registration hold on his or her record. Various criteria may be considered by the colleges during the review of the student's readmission request, including, but not limited to: current Grade Point Average, cumulative Grade Point Average, prior academic record and prior academic misconduct issues. 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 readmitted as early as possible. Application forms are available online at www.marquette.edu/registrar and a completed application must be submitted to the Office of the Registrar no later than one week before the start of the session for which the student wishes to enroll. (For the College of Nursing a completed application must be submitted by March 1 for Fall readmission and November 1 for Spring readmission.) A re-entering student who has attended another school or schools since leaving Marquette must request that an official transcript from each school be sent directly to the Office of the Registrar. The transcript(s) must be received before the application for readmission will be considered. The transcript(s) must be sent directly to the Office of the Registrar by the other institution(s); transcript(s) will not be accepted by Marquette if routed through the student. Records of applicants for readmission, including previous work at Marquette University, are subject to review and to a new evaluation of credits. A student who

interrupts residence for two or more consecutive terms normally must meet the graduation requirements which prevail at the time of readmission. A re-entering non-degree student who wishes to become degree-seeking, must apply through the Office of Undergraduate Admissions (See the “Admission with Non-Degree Status” section of the Undergraduate Bulletin).

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 Internal Transfer if they wish to transfer from one college to another. Various criteria may be considered by the colleges during review of the student’s request to transfer colleges, including, but not limited to: current Grade Point Average, cumulative Grade Point Average, prior academic record and prior academic misconduct issues. If the application for transfer is approved, the student will be governed by the degree requirements of the college into which the 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 admitted to the transfer college as early as possible. Application forms are available online at www.marquette.edu/registrar and a completed application must be submitted to the Office of the Registrar no later than one week before the start of the session for which the student wishes to enroll. (For the College of Nursing, a completed application must be submitted by March 1 to be considered for the Fall term and November 1 for to be considered for the Spring term)

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 through the Office of Undergraduate Admissions, according to the timelines of that office (See the “Admission with Non-Degree Status” section of the Undergraduate Bulletin). Various criteria may be considered by the colleges during the review of the student’s request for a status change, including, but not limited to: current Grade Point Average, cumulative Grade Point Average, prior academic record and prior academic misconduct issues.

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 grade 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.

IMMUNIZATION AND TUBERCULOSIS SCREENING REQUIREMENTS

All newly admitted and readmitted undergraduate, graduate, and professional students are required to provide proof of certain immunizations and complete a TB Screening questionnaire for tuberculosis. Prior to arrival on campus all new and readmitted students will provide to the Student Health Service proof of immunization and/or prior disease for Measles, Mumps, Rubella (MMR), Varicella (chicken pox) and Tetanus/Diphtheria. Proof is submitted via the Immunization History Form. Students are also required to complete the paper-and-pencil TB

screening questionnaire for risk of tuberculosis infection. Both the Immunization History Form and the TB Screening questionnaire are available on the Student Health Service Web site at www.marquette.edu/shs. Completed forms are submitted to the Student Health Service where all information will be retained in confidence.

Failure to submit the required immunization documentation and TB screening questionnaire within 30 days of the start of the student's first term or the readmitted term at Marquette will result in the placement of a registration "hold" on future registrations. The hold will be removed once the immunization and screening requirements have been met.

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

TUITION, FEES AND HOUSING

MARQUETTE UNIVERSITY PAYMENT POLICY

The Office of the Bursar is dedicated to providing service to our students and families in a professional and friendly manner while following the policies and procedures set forth by the university. The office provides accurate and timely information about each student's bursar account while encouraging our students to be active participants in managing their account.

The final step to complete a student's registration is payment in full of all fees for the term. Marquette University sends a monthly billing statement to each student while the student has an account balance. A student may also view his/her bursar account via CheckMarq. Payment due dates are available at www.marquette.edu/bursar. It is the student's responsibility to pay tuition, fees and housing by the published due date whether he/she receives a bill or not. Students who do not plan to attend the university are responsible for dropping classes through CheckMarq and notifying their respective college office. All courses for which a student is officially registered as of the close of registration are subject to fee assessment and payment, and as such to appear as part of the student's permanent record even if the student does not attend any sessions of the class. To avoid unnecessary fee charges and unnecessary courses with permanent grades of NC, UW, UNC, WA or F on the student's permanent record, it is the student's responsibility to review his/her official registration prior to the end of late registration to ensure it accurately reflects the courses the student plans to be enrolled in.

A student who does not pay in full by the due date, enroll in the Marquette Monthly Payment Plan or submit a billing authorization from an approved sponsor will be subject to a 1 percent late payment fee which is assessed monthly (12 percent annual percentage rate) on the outstanding balance. If the student does not pay the delinquent balance, Marquette may cancel a student's registration for the current term, prevent the student from registering for a subsequent term, withhold a student's academic transcript or diploma, turn the student's account over to a collection agency and/or take legal action to collect any balance due.

TUITION DISCOUNTS

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

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

PAYMENT OPTIONS

TRADITIONAL SEMESTER PAYMENT

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

- Cash and checks are acceptable methods of payment.
- Electronic payment (direct debit from checking or savings account) may be made by accessing the link on the Bursar Web site at www.marquette.edu/bursar.

- Credit card payment is available through a third party provider. The convenience fee for using this service is variable depending on the amount of the charge. This service may be accessed through the link on our Web site at www.marquette.edu/bursar or by calling (866) 893-4518.

MARQUETTE MONTHLY PAYMENT PLAN

Marquette offers the Marquette Monthly Payment Plan, which enables students and their families to budget all of their semester tuition, room and board, and student fees in five equal monthly installments. The MMPP is intended to cover the costs of fall (August–December) and spring (January–May) semesters. The MMPP is not a loan; there are no interest or finance charges. The only cost is a \$35 per semester enrollment fee. The fall semester program begins Aug. 5, 2009. All payments are due on the fifth of each month.

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 2009–2010)

| | |
|---|-------------|
| Full-time (12 to 18 credit hours), per term, All colleges except Engineering and Business Administration | \$14,340.00 |
| Full-time (12 to 19 credit hours), per term, Engineering and Business Administration | 14,340.00 |
| Full-time (credit hours may vary), per term, Physical Therapy (Doctoral phase) | 15,450.00 * |
| Part-time, per credit hour | |
| College of Professional Studies. | 535.00 |
| Part-time (Non Part-time Studies Program) | 835.00 |
| Excess credit hours over full-time, per credit hour | 185.00 |
| Credit established by examination, per credit hour | 75.00 |
| Les Aspin Center for Government Congressional Internship Program, per term | 13,860.00 |
| Language Reading Course (cost per course/audit only) FREN/GRMN (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, \$70.00.** Sphygmomanometer for sophomore nursing courses \$60.00) | 130.00 * |
| Cardiopulmonary Resuscitation (CPR) Certification† (sophomores only; prior to entering any clinical practicum) | 40.00 * |
| 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.

† This certification must be maintained throughout the remainder of the student's program through biannual recertification.

SERVICE FEES

| | |
|--|--------|
| Transcript fee, standard processing. | 5.00 |
| Transcript or enrollment verification fee, rush processing. | 10.00 |
| Diploma fee, replacement | 25.00 |
| Nursing credits by Advanced Course Validation fee (RN students only) | 200.00 |
| Student Activity Fee (per 16-week term) | 30.00 |
| UPASS Program (per 16-week term). | 42.00 |
| Student Health Service Fee (per 16-week term). | 136.00 |

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 and Business Administration). 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 students with a welcoming living-learning communities that enhance their out-of-classroom experiences and their sense of belonging within the university.

The university accommodates approximately 3,400 students in men's, women's and coeducational residence halls and about 1,000 students in university-owned apartments. Each residence hall provides easy access to classes, comfortable furnishings, 24-hour desk security and a chance to get involved through events and residence hall councils. The residence halls employ qualified students as resident assistants for each floor or wing, while full-time professionally trained staff direct each hall.

Most accommodations are double rooms, although single, triple and quadruple rooms also are available. Students can choose among three block meal options which can be used in any of the five residence hall dining rooms as well as other locations on campus.

All single freshman and sophomore students, except those residing with their parents or legal 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 deposit of \$200 is required for room reservation and is payable in conjunction with the tuition deposit. Applicants will then be randomly ordered during the assignment process. When an applicant is to be assigned, our housing system will match application criteria (roommate, room type and hall) with available spaces and preferences will be honored to the extent possible. 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.

Mashuda Hall is the only residence hall that is open during Winter and Spring Break periods. Students may stay over these break periods for an additional charge.

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; Marquette University; P.O. Box 1881; Milwaukee, WI 53201-1881; (414) 288-7208.

2009–2010 RESIDENCE HALL, APARTMENTS AND MEAL PLAN RATES PER TERM

| Hall | Room Type | Carte | | |
|-------------------------|-----------------|---------|-----------|-----------|
| | | Blanche | 175 Block | 125 Block |
| Abbottsford | Triple | \$4,370 | \$4,185 | \$4,050 |
| Carpenter | Single | \$5,645 | \$5,460 | \$5,325 |
| | Double | 4,940 | 4,755 | 4,620 |
| Cobeen | Single | \$5,595 | \$5,410 | \$5,275 |
| | Double | 4,860 | 4,675 | 4,540 |
| | Triple | 4,045 | 3,860 | 3,725 |
| | Quad | 4,910 | 4,725 | 4,590 |
| Marquette Suites | Large Double | \$5,150 | \$4,965 | \$4,830 |
| | Triple | 4,370 | 4,185 | 4,050 |
| Mashuda | Single | \$5,645 | \$5,460 | \$5,325 |
| | Standard Double | 5,130 | 4,945 | 4,810 |
| | Large Double | 5,150 | 4,965 | 4,830 |
| | Triple | 4,280 | 4,095 | 3,960 |
| | Quad | 5,060 | 4,875 | 4,740 |
| McCormick | Double | \$4,940 | \$4,755 | \$4,620 |
| | Triple | 4,280 | 4,095 | 3,960 |
| O'Donnell | Single | \$5,595 | \$5,410 | \$5,275 |
| | Double | 4,860 | 4,675 | 4,540 |
| Schroeder | Triple | 4,155 | 3,970 | 3,835 |
| | Double | \$4,940 | \$4,755 | \$4,620 |
| Straz | Triple | 4,370 | 4,185 | 4,050 |
| | Double | \$5,245 | \$5,060 | \$4,925 |
| | Quad | 4,580 | 4,395 | 4,260 |

Apartments (no meal plan included)

| | | |
|----------------------|------------------------|-------------|
| Campus Town | Studio | 625/month |
| | One bedroom | 870/month |
| | One bedroom town house | 950/month |
| | Two bedroom | 1,270/month |
| | Two bedroom corner | 1,355/month |
| | Two bedroom co-op | 1,460/month |
| | Two bedroom town house | 1,350/month |
| | Two and a half bedroom | 1,485/month |
| | Three bedroom | 1,620/month |
| | Three bedroom corner | 1,760/month |
| | Frenn | Two bedroom |
| Three bedroom | | 1,125/month |
| Three bedroom corner | | 1,270/month |
| Gilman | Studio | 395/month |
| | One bedroom | 520/month |
| Humphrey | One bedroom | 815/month |
| | Two bedroom | 1,110/month |

Meal Plan Only:

| | |
|---------------|---------|
| Carte Blanche | \$1,860 |
| Block 175 | 1,675 |
| Block 125 | 1,540 |

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 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 registration ends, his/her official registration accurately reflects only those courses for which the student plans to enroll. Refunds for tuition 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.

NOTE: 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; Marquette University; P.O. Box 1881; 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 formally 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. All applicants meeting the December 1 admission application deadline will be considered for the Ignatius Scholarship. 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 consult the Office of Undergraduate Admissions' Web site at www.marquette.edu/student/ugrad/scholarships.

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 (FPELL): This is a federal program which provides funds to eligible undergraduate students who do not possess a bachelor's degree. Students eligible for assistance through this grant program may receive up to \$5,350 per year.

Federal Supplemental Educational Opportunity Grant (FSEOG): The FSEOG 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 \$500 to \$4,000 per year.

Federal Academic Competitive Grant (ACG): This is a new federal grant program. To receive \$750 for the first year, students must meet the following criteria: enrolled at 2- or 4-year institution and Pell eligible and graduated from high school after 1/1/2006 and completed a rigorous high school curriculum as defined by the state. To receive \$1,300 for the second year, students must meet the initial criteria and have a minimum GPA of 3.000.

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

Wisconsin Tuition Grant (WTG): (Wisconsin residents only.) This grant program, funded by the state of Wisconsin, attempts to provide a percentage of the cost differential between attendance at a public and private institution. In order to be eligible, a student must be a legal resident of the state of Wisconsin, enrolled in an undergraduate program at least half-time, and must not possess a bachelor's degree. The amount of this grant ranges from \$1,000 to \$2,900 and is based on need. WTG can be received for a maximum of ten terms.

Marquette University Grants (MU Grant): MU Grants are awarded to 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 JobConnection. Job vacancies are filled on a first-come, first-served basis. Once a job is secured, students can arrange a work schedule around their class schedule. Typical jobs include food service worker, laboratory

assistant, residence hall desk receptionist, typist, computer programmer, maintenance worker, community service worker and many more. Off-campus jobs are found in non-profit agencies as well as many area businesses.

Students wishing to work must comply with the Immigration Reform Act of 1986. 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 2009–2010 academic year. Academic policy and course changes will apply to all students as of the date they become effective, regardless of whether they were in effect at the time the student initially enrolled at Marquette. Students are held accountable for knowledge of the detailed information and for compliance with the regulations contained in the *Undergraduate Bulletin* and in the *Student Handbook*.

Each undergraduate student receives a copy of the *Undergraduate Bulletin*, free of charge, upon entrance to the university, and should preserve that copy for reference during his/her entire undergraduate career at Marquette. Continuing students may obtain an additional copy of the bulletin he/she received as an entering student at the Book Marq. 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.

COMMENCEMENT

Commencement at Marquette is a symbolic ceremony provided for students, faculty and families in celebration of our students' accomplishments. Following is the policy on when a student may participate in the Spring or Winter commencement.

1. Students may participate in only one university commencement per degree.

2. Spring Commencement:

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

3. Winter Commencement:

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

4. Ph.D. Candidates:

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

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

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

CREDIT

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

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

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

ENROLLMENT STATUS

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

AUDIT

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

Students must first register for the course via CheckMarq, then request the audit option from the student's college office. The Audit Request form on the Office of the Registrar's Web site (www.marquette.edu/registrar) is used for this request through the end of registration for each session, as published on the University Academic Calendar. After the end of registration for each session, students must contact their college office to request the audit option. The deadline to request the audit option for each session is listed on the University Academic Calendar. Audit-only students should refer to the Tuition and Fees section of the *Undergraduate Bulletin* for information on available tuition discounts.

ACADEMIC ADVISING

THE UNIVERSITY'S ADVISING PHILOSOPHY

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

GOALS FOR ADVISING

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

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

ADVISER AND STUDENT EXPECTATIONS

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

Students may anticipate the following from advisers:

- 1) The adviser recognizes the goal of advising is the academic success and personal growth of the student.
- 2) The adviser works to develop good rapport with the student and in doing so, also serves as a mentor.
- 3) The adviser has knowledge of major course content, course sequencing, the University Core of Common Studies (UCCS) and graduation requirements as provided in the bulletin.
- 4) The adviser is available during his or her regular office hours or by appointment and prepares for each scheduled session by reviewing the advisee's record before the meeting.
- 5) In addition to showing common courtesy toward the advisee, the adviser listens carefully, provides encouragement and support and respects the advisee's ability to make decisions.
- 6) The adviser helps the student develop strategies for academic success and understand the possible associated consequences.
- 7) The adviser identifies and addresses potential conflicts that might arise in the students' schedule and develops a long-term schedule to avoid conflicts (e.g., prerequisites, infrequent offerings, etc.).
- 8) The adviser informs advisees of opportunities and information, particularly related to majors and minors but also including internships, research, graduate and professional school opportunities.
- 9) The adviser understands that academic performance can be influenced by factors unrelated to the classroom and is prepared to deal with these issues and make referrals as necessary.
- 10) The adviser knows where to direct a student to additional resources when necessary.

Advisers may anticipate the following from students:

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

- 9) The student seeks appropriate help to solve problems that may adversely affect his or her academic performance. The student recognizes that the academic adviser is the appropriate person with whom to start this process.
- 10) The student ensures that all questions and concerns are adequately addressed.

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

¹ The College of Arts and Sciences *Pre-Major Advising Manual* (2003-2004) is the source for much of the information contained herein.

DECLARATION OF A MAJOR

Students declare their majors by means of the application for admission when they matriculate to the university in all colleges except the College of Arts and Sciences. Students in the College of Arts and Sciences officially declare their major with the academic department that offers the desired major and should do so before their junior year. Students who wish to change their majors, must do so by following the procedures in place by the college in which they currently reside and by the college and/or department that offers the desired major.

UPPER AND LOWER DIVISION COURSES

Lower division courses are numbered 1000-2999 and normally are taken by freshmen and sophomores. Upper division courses are numbered 3000-4999 and normally are taken by juniors and seniors.

CREDIT BY MARQUETTE EXAMINATION

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

ADVANCED PLACEMENT (AP)

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

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

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

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

ADVANCED PLACEMENT CREDIT AND PLACEMENT

| SUBJECT/SCORE | 1 | 2 | 3 | 4 | 5 |
|--|-----------|-----------|------------------------------|---|---|
| Art History | No Credit | No Credit | No Credit | 3 cr. for FIAR 9290 | 6 cr. for HIST 1201 and 1202 |
| Biology | No Credit | No Credit | No Credit | 3 cr. for BIOL 1009 | 6 cr. for BIOL 1001 and 1002 |
| Chemistry | No Credit | No Credit | 4 cr. for CHEM 1001 | 8 cr. for CHEM 1001 and 1002 | 8 cr. for CHEM 1001 and 1002 |
| Computer Science A | No Credit | No Credit | No Credit | 4 cr. COSC 1010 | 4 cr. for COSC 1010 |
| Computer Science AB | No Credit | No Credit | 4 cr. for COSC 1010 | 7 cr. for COSC 1010 and COSC 2100 | 7 cr. for COSC 1010 and COSC 2100 |
| Economics: Macro | No Credit | No Credit | 3 cr. for ECON 2004 | 3 cr. for ECON 2004 | 3 cr. for ECON 2004 |
| Economics: Micro | No Credit | No Credit | 3 cr. for ECON 2003 | 3 cr. for ECON 2003 | 3 cr. for ECON 2003 |
| English Language/ Literature and Composition | No Credit | No Credit | No Credit | 3 cr. for ENGL 1001 | 6 cr. for ENGL 1001 and 1002 |
| Environmental Science | No Credit | No Credit | No Credit | 3 cr. for PHYS 1009 | 3 cr. for PHYS 1009 |
| French Language | No Credit | No Credit | Placement into FREN 2001 | 4 cr. for FREN 2003 | 3 cr. for FREN 3001 |
| French Literature | No Credit | No Credit | Placement into FREN 2001 | 3 cr. for FREN 3001 | 6 cr. for FREN 3001 and 3500 |
| German Language | No Credit | No Credit | Placement into GERM 2001 | 4 cr. for GRMN 2003 | 3 cr. for GRMN 3001 |
| Government and Politics: Comparative | No Credit | No Credit | No Credit | 3 cr. for POSC 2401 | 3 cr. for POSC 2401 |
| Government and Politics: United States | No Credit | No Credit | No Credit | 3 cr. for POSC 2201 | 3 cr. for POSC 2201 |
| History: American | No Credit | No Credit | No Credit | 6 cr. for HIST 2101 and 2102 and placement into upper division* courses | 6 cr. for HIST 2101 and 2102 and placement into upper division* courses |
| History: European | No Credit | No Credit | No Credit | 3 cr. for HIST 1002 and placement into upper division* courses | 3 cr. for HIST 1002 and placement into upper division* courses |
| History: World | No Credit | No Credit | No Credit | 6 cr. for HIST 9290 | 6 cr. for HIST 9290 |
| Human Geography | No Credit | No Credit | No Credit | 3 cr. for ANTH 9290 | 3 cr. for ANTH 9290 |
| Italian Language | No Credit | No Credit | Placement into ITAL 2001 | 3 cr. for ITAL 2002 | 3 cr. for ITAL 3001 |
| Latin Language | No Credit | No Credit | Placement into LATN 20013 | 3 cr. for LATN 2001 | 6 cr. for LATN 2001 and 2002 |
| Latin – Vergil | No Credit | No Credit | Placement into LATN 2001 | 3 cr. for LATN 2001 | 6 cr. for LATN 2001 and 2002 |
| Mathematics: Calculus AB | No Credit | No Credit | 4 cr. for MATH 1450 | 4 cr. for MATH 1450 | 4 cr. for MATH 1450 |
| Mathematics: Calculus BC | No Credit | No Credit | 8 cr. for MATH 1450 and 1451 | 8 cr. for MATH 1450 and 1451 | 8 cr. for MATH 1450 and 1451 |
| Music Theory | No Credit | No Credit | No Credit | 3 cr. for MUSI 1020 | 3 cr. for MUSI 1020 plus 3 cr. for MUSI 9290 |
| Physics B**# | No Credit | No Credit | No Credit | 6 cr. for PHYS 1001 and 1002 | 6 cr. for PHYS 1001 and 1002 |
| Physics C**# (Mechanics) | No Credit | No Credit | No Credit | 3 cr. for PHYS 1003 | 3 cr. for PHYS 1003 |
| Physics C**# (Electricity and Magnetism) | No Credit | No Credit | No Credit | 3 cr. for PHYS 1004 | 3 cr. for PHYS 1004 |
| Psychology | No Credit | No Credit | No Credit | 3 cr. for PSYC 1001 | 3 cr. for PSYC 1001 |
| Spanish Language | No Credit | No Credit | Placement into SPAN 2001 | 4 cr. for SPAN 2003 | 3 cr. for SPAN 3001 |
| Spanish Literature | No Credit | No Credit | Placement into SPAN 2003 | 3 cr. for SPAN 3001 | 6 cr. for SPAN 3001 |
| Statistics | No Credit | No Credit | No Credit | 3 cr. for MATH 1700 | 3 cr. for MATH 1700 |

* Upper division courses 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 March 2009

COLLEGE LEVEL EXAMINATION PROGRAM (CLEP)

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

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

APPROVED CLEP SUBJECT EXAMINATIONS

| SUBJECT EXAMINATION | SCALED | MARQUETTE EQUIV. COURSE | HOURS OF CREDIT |
|--|-------------------|----------------------------|--------------------|
| | SCORE REQUIRED | | |
| GENERAL BIOLOGY | 60 | BIOL 1001 AND 1002 | 6 |
| | 50 | BIOL 1009 | 3 |
| GENERAL CHEMISTRY | 50 | CHEM 1001 AND 1002 | 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 1001 | 3 |
| WESTERN CIVILIZATION 2 | 60 | HIST 1002 | 3 |
| HISTORY OF THE U.S. 1 | 55 | HIST 2101 | 3 |
| HISTORY OF THE U.S. 2 | 55 | HIST 2102 | 3 |
| INFORMATION SYSTEMS AND COMPUTER APPLICATIONS | 55 | COSC 1000 | 3 |
| COLLEGE ALGEBRA | 55 | MATH 1100 | 3 |
| CALCULUS WITH ELEMENTARY FUNCTIONS | 55 | MATH 1450 | 4 |
| AMERICAN GOVERNMENT | 50 | POSC 2201 | 3 |
| INTRODUCTION TO PSYCHOLOGY 1 | 55 | PSYC 1001 | 3 |
| INTRODUCTORY SOCIOLOGY | 50 | SOCI 1001 | 3 |
| PRINCIPLES OF MICROECONOMICS | 55 | ECON 2003 | 3 |
| PRINCIPLES OF MACROECONOMICS | 55 | ECON 2004 | 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.

INTERNATIONAL BACCALAUREATE (IB)

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

Marquette University faculty committees review the content of the International Baccalaureate curriculum to determine course equivalents and required scores. Test results, sent by the International Baccalaureate Organization, are received during the summer prior to enrollment. Students should contact their College advising office to learn which IB credits have been awarded prior to registering for courses in the freshman year.

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

INTERNATIONAL BACCALAUREATE (IB) CREDIT AND PLACEMENT

| Group | Subject/Score | H1-H3 | H4 | H5 | H6 | H7 |
|----------------------------------|------------------------------------|-----------|--|--|--|--|
| First Language | English A1 | no credit | ENGL 1001 – 3 cr. ENGL 1002 – 3 cr. | ENGL 1001 – 3 cr. ENGL 1002 – 3 cr. | ENGL 1001 – 3 cr. ENGL 1002 – 3 cr. | ENGL 1001 – 3 cr. ENGL 1002 – 3 cr. |
| | All non-English A Languages | no credit | FOLA waiver 3 humanities credits | FOLA waiver 3 humanities credits | FOLA waiver 3 humanities credits | FOLA waiver 3 humanities credits |
| Second Language | French B German B Spanish B | no credit | Placement into 2001 level | Placement into 2003 level | 4 credits for 2003 level | 3 credits for 3001 level |
| | Greek B Italian B Japanese B | no credit | Placement into 2001 level | Placement into 2002 level | 3 credits for 2002 level | 3 credits for 2002 level |
| | Other non-English B languages | no credit | * | * | 3 credits in humanities | 3 credits in humanities |
| Individuals and Societies | Business and Management | no credit | MANA 9390 – 3 cr. | MANA 9390 – 3 cr. | MANA 9390 – 3 cr. | MANA 9390 – 3 cr. |
| | History: Africa | no credit | HIST 1401 – 3 cr. HIST 9290 – 3 cr. | HIST 1401 – 3 cr. HIST 9290 – 3 cr. | HIST 1401 – 3 cr. HIST 9290 – 3 cr. | HIST 1401 – 3 cr. HIST 9290 – 3 cr. |
| | History: Americas | no credit | HIST 1101 – 3 cr. HIST 1301 – 3 cr. | HIST 1101 – 3 cr. HIST 1301 – 3 cr. | HIST 1101 – 3 cr. HIST 1301 – 3 cr. | HIST 1101 – 3 cr. HIST 1301 – 3 cr. |
| | History: Europe | no credit | HIST 1002 – 3 cr. HIST 9290 – 3 cr. | HIST 1002 – 3 cr. HIST 9290 – 3 cr. | HIST 1002 – 3 cr. HIST 9290 – 3 cr. | HIST 1002 – 3 cr. HIST 9290 – 3 cr. |
| | History: Islam | no credit | HIST 9290 – 6 cr. | HIST 9290 – 6 cr. | HIST 9290 – 6 cr. | HIST 9290 – 6 cr. |
| | Geography | no credit | ANTH 9290 – 3 cr. PHYS 9290 – 3 cr. | ANTH 9290 – 3 cr. PHYS 9290 – 3 cr. | ANTH 9290 – 3 cr. PHYS 9290 – 3 cr. | ANTH 9290 – 3 cr. PHYS 9290 – 3 cr. |
| | Economics | no credit | ECON 2003 – 3 cr. ECON 2004 – 3 cr. | ECON 2003 – 3 cr. ECON 2004 – 3 cr. | ECON 2003 – 3 cr. ECON 2004 – 3 cr. | ECON 2003 – 3 cr. ECON 2004 – 3 cr. |
| | Philosophy | no credit | PHIL 9290 – 6 cr. | PHIL 9290 – 6 cr. | PHIL 9290 – 6 cr. | PHIL 9290 – 6 cr. |
| | Psychology | no credit | PSYC 1001 – 3 cr. | PSYC 1001 – 3 cr. | PSYC 1001 – 3 cr. | PSYC 1001 – 3 cr. |
| Experimental Sciences | Biology | no credit | BIOL 1001 – 3 cr. BIOL 1002 – 3 cr. | BIOL 1001 – 3 cr. BIOL 1002 – 3 cr. | BIOL 1001 – 3 cr. BIOL 1002 – 3 cr. | BIOL 1001 – 3 cr. BIOL 1002 – 3 cr. |
| | Chemistry | no credit | CHEM 1001 – 4 cr. CHEM 1002 – 4 cr. | CHEM 1001 – 4 cr. CHEM 1002 – 4 cr. | CHEM 1001 – 4 cr. CHEM 1002 – 4 cr. | CHEM 1001 – 4 cr. CHEM 1002 – 4 cr. |
| | Physics | no credit | PHYS 1003 – 4 cr. PHYS 1004 – 4 cr. | PHYS 1003 – 4 cr. PHYS 1004 – 4 cr. | PHYS 1003 – 4 cr. PHYS 1004 – 4 cr. | PHYS 1003 – 4 cr. PHYS 1004 – 4 cr. |
| Mathematics | Computer Science | no credit | COSC 1000 – 3 cr. COSC 1010 – 3 cr. | COSC 1000 – 3 cr. COSC 1010 – 3 cr. | COSC 1000 – 3 cr. COSC 1010 – 3 cr. | COSC 1000 – 3 cr. COSC 1010 – 3 cr. |
| | Mathematics | no credit | MATH 1450 – 4 cr. MATH 1451 – 4 cr. | MATH 1450 – 4 cr. MATH 1451 – 4 cr. | MATH 1450 – 4 cr. MATH 1451 – 4 cr. | MATH 1450 – 4 cr. MATH 1451 – 4 cr. |
| The Arts | Visual Arts | no credit | FIAR 9290 – 6 cr. | FIAR 9290 – 6 cr. | FIAR 9290 – 6 cr. | FIAR 9290 – 6 cr. |
| | Theatre Arts | no credit | THAR 9290 – 6 cr. | THAR 9290 – 6 cr. | THAR 9290 – 6 cr. | THAR 9290 – 6 cr. |

* The Diederich College of Communication foreign language requirement (2 courses) is waived.

March, 2009

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 Klingler College of Arts and Sciences, international business majors in the College of Business Administration, College of Education and speech pathology and audiology majors in the College of Health Sciences must satisfy a foreign language requirement for graduation. This may be accomplished by placement, course work, or both.

FOREIGN LANGUAGE REQUIREMENT

| College | Majors With a Requirement | Requirement |
|-------------------------|--------------------------------|---|
| Arts and 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 1001-3100) |
| Communication | All | 2 courses in Foreign Language <i>or</i> 2 additional courses in Diverse Cultures |
| Education | 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 1001: 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 Spanish 1001, but have studied two or more years of the language at the high school level, must register for the 1003: Intensive Elementary course if they plan to continue study in that language. The SPAN 1001: 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 Arabic, Chinese, Classical Greek, Latin, Italian, or Japanese in high school, and who plan to continue with the study of that language should register for a 1001: Elementary Language course. Students with three years or more of high school study should register for a 2001: Intermediate Language course. Students should consult with the Department of Foreign Languages and Literatures if they have any questions regarding the placement in these levels.
- 5) Students who are native or near-native speakers of Arabic, Chinese, French, German, Italian, Japanese and Spanish are not eligible to register in the elementary or intermediate levels of their native language for credit. Registration in these courses may result in no credit being awarded for the course. Students should consult with the Department of Foreign Languages and Literatures regarding the appropriate level for which to register.
- 6) Students who are native or near-native speakers of French, German or Spanish, and who plan to continue advanced study of that language must first take the WebCAPE Placement Exam in that language to determine the level of proficiency. After taking the exam, students must consult with the Department of Foreign Languages and Literatures before registering for an advanced foreign language course. Native speakers of other languages should consult with the records office in their college regarding possible exemption from the foreign language requirement.
- 7) Students who have spent six weeks or more studying in a French, German or Spanish-speaking country must take the WebCAPE Placement Examination, and consult with the Department of Foreign Languages and Literatures before registering for a foreign language course.
- 8) Students who have college credit for a foreign language course from another university (including CAPP courses in high school) must have their transcripts sent to the Office of Undergraduate Admissions and should consult with the Registrar and their College office regarding the transfer of foreign language credit, and the Department of Foreign Languages and Literatures before registering for a foreign language course. Students with college credit should not take the WebCAPE Placement Examination since placement will be determined by the college credit transferred.
- 9) Students who have taken the Advanced Placement Exam or the International Baccalaureate Exam and have received credit for a course in a foreign language or literature should refer

to the Department of Foreign Languages and Literatures' 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. Students may not place themselves, or change their placement without departmental approval. Registration in a course lower than the approved level may result in no credit being awarded for the course.

Further information on the procedures and instructions regarding the WebCAPE Placement Examination can be found on the Department of Foreign Languages and Literatures' 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 2003: Intensive 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 2003). If a student places in 3001 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. 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 graduate course if the student has a B (3.000) or better average, his/her current program is such as to allow for involvement in graduate level work. To register for a graduate course, an undergraduate student must complete the *Permission to Enroll in a Graduate Course* form, available on the Graduate School Web site at www.marquette.edu/grad/forms_index.shtml. The student is responsible for securing the necessary signatures (including the course instructor and the dean of his/her undergraduate college or school), returning the completed form to the department offering the course, then registering for the course using the CheckMarq system and the permission number provided.

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

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

UNDERGRADUATE GRADE POINTS AND GRADING SYSTEM

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

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

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

| <i>Grade</i> | <i>Achievement</i> | <i>Grade Points</i> |
|--------------|--------------------|---------------------|
| A | Superior | 4.0 |
| AB | | 3.5 |
| B | Good | 3.0 |
| BC | | 2.5 |
| C | Satisfactory | 2.0 |
| CD | | 1.5 |
| D | Minimum passing | 1.0 |
| F | Failing | 0.0 |

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

The following letter grades do not have associated grade points:

| Grade | Circumstance |
|--------------|---|
| ADW | Administrative Withdrawal; student was withdrawn from the course for administrative reasons, as determined by the university via a dean's decision, a formal hearing and/or an appeal process. |
| AU | Audit. |
| CR | Credit; equivalent of C work or better. |
| I | Incomplete; assigned on a pre-arranged basis, to allow completion of course assignments other than the final examination; the student's performance in the course must merit this exception otherwise, the instructor will assign either a grade of F, or a passing grade that reflects both the quality of the work completed and the significance of the work which has not been completed. |
| IC | Course Incomplete; assigned to all students enrolled in a course, clinical, independent study/research, capstone, etc. that will not be completed by the grading deadline for the term in which the course is scheduled; changed to a letter grade by the faculty at the time of completion (no initiation needed by the student). |
| IE | Incomplete Extension; assigned by the college office to those students who are granted an extension to the deadline for removal of an I, IX or X grade. |
| IX | Incomplete course work and final exam not taken; assigned to a student who has incomplete course work and is absent from the final examination; must meet the criteria for both the I grade and the X grade; a student not qualifying for the IX will be assigned the grade of F. |
| NC | No Credit; equivalent of less than C work. |
| SNC | Satisfactory completion in a course bearing no credit; mandatory grade for all zero credit bearing courses. |
| UNC | Unsatisfactory completion in a course bearing no credit; mandatory grade for all zero credit bearing courses. |
| S | Satisfactory completion in a credit bearing competency-based course; equivalent of C work or better. |

| | |
|----|--|
| SY | A permanent grade indicating satisfactory work completed in the first term of a series of year-long courses, where grades are assigned only in the final course in the series. |
| U | Unsatisfactory completion of a credit bearing, competency-based course; equivalent of less than C work. |
| UW | Unexcused withdrawal; withdrawal initiated by the faculty or college office when a student registered for a course, never attended and failed to officially withdraw. |
| UY | A permanent grade indicating unsatisfactory work completed in the first term of a series of year-long courses, where grades are assigned only in the final course in the series. |
| W | Official withdrawal; withdrawal initiated by the student, with approval of the college office. |
| WA | Withdrawn-Excessive Absences; withdrawal initiated by the faculty or college office due to excessive absences in the course or student is found to be in violation of the "Undergraduate Attendance Policy" section of the Undergraduate Bulletin. |
| X | Completed coursework and final exam not taken; assigned to a student who is absent from the final examination and who might earn a passing grade in the course were he/she to take a delayed examination; both conditions must exist, or the student is assigned the grade of F; student receiving the grade of X must file a written explanation for the absence with his/her college office. |

CLARIFICATIONS OF GRADES

ADW GRADE

This grade is assigned by the college office offering the course, and will take precedence over the W, WA or UW grade, should the student withdraw or be withdrawn from a course after the faculty or other university personnel initiated the administrative action which ultimately results in this grade.

CD AND D GRADES

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

CR/NC OPTION (formerly S/U)

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

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

I, IE, IX AND X GRADES

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

REPEATED COURSES

Students who are required to repeat a course by their college because of the requirements of a major/minor, or who choose to repeat a course, must file a request to repeat the course with their college office. The repeated 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; however, all previous courses and grades remain on the student's permanent academic record. Beginning with courses repeated in Fall 1999, the grade in the original course is excluded from the cumulative grade point average calculation. The cumulative grade point average is adjusted at the time the repeated course is graded. If a student withdraws from the repeated course, the earlier grade will remain in the cumulative grade point average.

Students may repeat a course regardless of the original grade. 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 no limit on the number of times a student may repeat a course. Students may not exercise the CR/NC option for a repeated course. Courses repeated at other institutions will not be used to replace grades earned at Marquette.

GRADE APPEALS PROCEDURE

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

The written appeal must be submitted to the chair of the department offering the course or, in schools or colleges with no departmental structure, to the associate dean. The written appeal must provide the reason(s) the student believes the recorded grade is incorrect. The student may present evidence of his/her performance and may also request that all other pertinent materials be supplied by the instructor. The chair, or associate dean, will collect and analyze the evidence in a timely manner. Evidence will be gathered through consultations with the instructor, the student and any witnesses. These consultations may be in person, by phone or by electronic means. Hard copies of relevant documents may also be requested. The chair, or associate dean, will evaluate the appeal or choose to designate an ad hoc committee for this purpose. The chair, associate dean, or ad hoc committee will consider the appeal and evidence and make one of the following decisions: the assigned grade should remain, the course instructor is asked to reconsider the grade in light of information collected and the reconsidered grade will stand, or a grade change is warranted. The decision will be communicated in writing within 30 days to the student and the instructor with copies of the formal response placed in the student's file and forwarded to the dean and any indicated grade changes filed with the registrar.

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

EXAMINATIONS AND GRADE REPORTING

MIDTERM ASSESSMENT

There is a midterm assessment of the work completed during the first half of the fall and spring semester for most undergraduate courses. If midterm grades will be assigned, the instructor will make this known to the class at the beginning of the term.

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

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 the "Undergraduate Grade Points and Grading System" section of the Undergraduate Bulletin, he /she will be assigned the grade of X and 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.

MIDTERM AND FINAL GRADES

All students obtain their grade information via CheckMarq (<http://checkmarq.mu.edu>).

HONOR SOCIETIES

ALPHA SIGMA LAMBDA

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

ALPHA SIGMA NU

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

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

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

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

PHI BETA KAPPA

Phi Beta Kappa, chartered at William and Mary in 1776, is the oldest and most prestigious of the academic honor societies in the United States. Its purpose is to distinguish superior academic character and achievement and, through lectureships, scholarships, and publication of *The American Scholar*, to promote liberal education throughout the country. There are only 276 chapters, and Marquette's Zeta chapter dates from 1971. Membership requirements typically include good (faculty-attested) academic character and a GPA in liberal arts courses within the top seven or eight percent of the graduating class. Students need not apply to be considered for membership. For further details, consult the Klingler College of Arts and Sciences 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. 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 consecutive terms 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 plan of studies; *however, it is ultimately each student's responsibility to know and fulfill the requirements for graduation specified for the selected plan.*

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

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

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

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

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

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

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

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

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

3. 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.

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

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

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

7. The student must attend any course of lectures, or any other exercises which have been or may be required, even though such courses receive no recognition in terms of credit hours.

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

9. May graduates must attend Commencement exercises. Permission to be absent may be requested only for serious reasons by writing to the dean of the student's college by May 1

GRADUATION HONORS

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

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

FAMILY EDUCATION RIGHTS AND PRIVACY ACT (FERPA)

In compliance with the Family Educational Rights and Privacy Act, Marquette University notifies its students each term of their rights to inspect, amend and prevent disclosure of their education records. In addition, Marquette's policy regarding education records is printed in the *At Marquette* student handbook and copies may be obtained from the Office of Student Development in the Alumni Memorial Union, 329, or online on the "Academic Policy" page on the Web site of the Office of the Registrar (www.mu.edu/registrar).

UNDERGRADUATE ATTENDANCE POLICY

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, prevents the student from getting the full benefit of the course. Instructors may include class attendance as a measure of academic performance. An instructor's syllabus must give particular directions regarding class attendance and the consequences for non-attendance. Regardless of the faculty's policy on attendance, students who miss an exam or a deadline must contact their instructor as soon as possible and failure to do so may result in a withdrawal from the course by the college office. In addition, regardless of the faculty's policy on attendance, students who are absent from class for a week or more must inform the college office in which they are enrolled and, failure to do so may result in a withdrawal from the course by the college office. For those courses in which no attendance is taken, a student's last date of attendance shall be determined by the last date of participation in an academically-related activity for the course, including, but not limited to: an exam or quiz, a submitted assignment, participation in a lab activity or participation in computer-assisted instruction.

STUDENTS ON UNIVERSITY ACTIVITIES

Students who participate in an officially sanctioned university activity should be given the opportunity to make up class examinations or other graded assignments that are missed as a result of this participation or related travel. It is recognized that sometimes an exam or graded assignment is impossible to make up. Some faculty may assign collaborative projects that depend on other classmates, or oral presentations that incorporate questioning by the entire class, or may use evaluative methods that cannot easily be replicated by the instructor. This policy does not prohibit any member of the faculty from making the determination that certain course work cannot be made up. Faculty who intend to deny the opportunity to make up certain exams or projects must inform the student of this conflict and its consequences (reduced grade or otherwise) in the course syllabus. Other than the above situations, examinations or other assignments missed as a result of university sanctioned activities may be made up. The manner in which the work will be made up is left to the discretion of each individual faculty member.

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

Students should:

1. Make every effort to schedule classes that will minimize activity and travel conflicts
2. Provide a schedule of all activities and related travel to all their instructors within the first week of each semester or as soon as possible for non-scheduled event.
3. Obtain any class notes or other course material missed due to absence prior to taking any subsequent examinations or submitting any subsequent graded assignments.
4. Make arrangements with the instructor to make up any missed work prior to any absence due to a university sponsored event.

Faculty should:

1. Inform all students on the first day of class and in writing (as part of the course syllabus) of their absence policy and their make-up policy.
2. Faculty and students should develop an agreed upon and mutually acceptable resolution to situations of missed classroom activities and missed work for university sanctioned events.

The above represents university standards; each college may have additional requirements for students enrolling in their courses.

CLASSIFICATION

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

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 student's college dean 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

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

All students who do not maintain at least a 2.000 cumulative grade point average in Marquette work are subject to review by their academic college and possible academic dismissal at the discretion of the student's college or program. However, all students who do not maintain at least a 2.000 cumulative average in Marquette work *and* whose grade point average falls within the following categories *will be* reviewed by his/her college and are subject to possible academic dismissal. Academic dismissal is recorded on the official transcript of the university.

| <i>Degree Hours Earned</i> | <i>Student's Cumulative Grade 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 grade point deficiency or excessive failing grades, the college office, will prescribe, in writing, conditions under which a student is allowed to continue. Students who fail to meet the conditions for progress stipulated by the college office or 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.

REGISTRATION

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

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

WITHDRAWAL FROM COURSES

A student who wishes to withdraw from one or more courses, but still attend at least one other course during the term, must officially withdraw from the courses using the Withdrawal Form on the Office of the Registrar's web site (www.marquette.edu/registrar). The student is not officially withdrawn from any course until the withdrawal form, with all the necessary signatures is returned by the students to the office of the academic dean.

A student may obtain permission to withdraw from a course, resulting in a 'W' grade, during the period extending from the day following the end of registration for a particular session, until the date specified in the University Academic Calendar. 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).

If a student, at any time, fails to manifest those qualities judged to be appropriate and necessary to the professional field for which his or she is preparing, withdrawal from the program may be initiated by the college.

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/she will receive the appropriate withdrawal grade by the faculty or the college dean in each course. This 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.

A complete term 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 student's financial aid will be adjusted as required by federal and state refund calculations and institutional policy based on this date.

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

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

ACADEMIC HONESTY POLICY

PREAMBLE

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

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

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

RESPONSIBILITY FOR ACADEMIC HONESTY

This policy applies to students and faculty in all programs under the auspices of the Graduate School and undergraduate programs.

ACADEMIC HONESTY consists of truth telling and truthful representations in all academic contexts. All members of the academic community have a responsibility to ensure that academic honesty is maintained. In what follows the wording “Chair” refers to either a department chair or an equivalent official, “Associate Dean” refers to either an Associate Dean or an equivalent official, or in the case of the Graduate School it will refer to the Assistant Vice Provost for Graduate Programs, the word “College” refers to a college, school, or other academic unit, and the words “assigned college” refers to the degree granting college or school (i.e. for graduate students the assigned college is the Graduate School).

Faculty have primary responsibility for:

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

Students have responsibility for:

1. Refraining from cheating and plagiarism.
2. Refusing to aid or abet any form of academic dishonesty.
3. Notifying professors and/or their advisor about observed incidents of academic misconduct. The anonymity of a student reporting an incident of academic dishonesty will be protected to the extent permitted by law.

DEFINITIONS OF ACADEMIC DISHONESTY

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

CHEATING

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

DISHONEST CONDUCT

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

PLAGIARISM

Plagiarism is intellectual theft. It means use of the intellectual creations of another without proper attribution. Plagiarism may take two main forms, which are clearly related: 1. To steal or pass off as one's own the ideas or words, images, or other creative works of another and 2.

To use a creative production without crediting the source, even if only minimal information is available to identify it for citation.

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

COLLUSION

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

RESEARCH MISCONDUCT

Marquette University has a duty to ensure the integrity of research and will respond to any allegation of research misconduct in a thorough, competent, timely, objective, and fair manner. Research misconduct is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results. The research misconduct policy applies to faculty, students, and others who are employed by or affiliated with Marquette University. Students who are accused of misconduct related to grant-funded research shall be governed by the procedures of the research misconduct policy, found at www.marquette.edu/orsp/policies/upp.shtml. Students who are accused of misconduct related to research that is not grant-funded and is a part of a student's academic program will be governed by the University Policy on Academic Honesty, found at www.marquette.edu/rc/academichonesty.shtml. Any uncertainty related to which policy will govern a given situation will be decided by the Research Integrity Officer.

CONSEQUENCES OF ACADEMIC DISHONESTY

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

PROCEDURES FOR INCIDENTS OF ACADEMIC DISHONESTY

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

FIRST OFFENSES

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

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

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

The faculty must maintain careful documentation of the incident.

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

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

STUDENT’S APPEAL

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

DISCIPLINARY RECOMMENDATIONS BY FACULTY OF ADW OR F

If the faculty member recommends that the student be administratively withdrawn from the course and assigned a final grade of ADW or that a final grade of F be assigned, the Associate Dean of the student’s assigned college (the Assistant Vice Provost for Graduate Programs) will review the details of the incident and make the final decision within 5 working days of receipt of the request, and provide a written statement to all parties concerned.

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

REPEAT OR MORE SERIOUS OFFENSES

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

Each College will have guidelines for the composition and selection of the College Panel to assure a review by experienced faculty and/or administrators not directly involved in the incident(s). The Panel reviews all aspects of the student’s record, the details of the student’s

behavior and may ask the student, instructor(s), and others to speak with the panel. Within 15 calendar days of being given the charge, the Panel will forward its recommendations for appropriate and just disciplinary action to the Associate Dean (in the case of graduate students to the Assistant Vice Provost for Graduate Programs) of the student's assigned college with a copy to the Dean. All disciplinary decisions that involve a campus wide sanction, such as suspension or expulsion, will be made by the Dean of the student's assigned college with all other actions being taken by the Associate Dean.

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

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

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

OTHER CONSIDERATIONS

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

MAINTENANCE OF DISCIPLINARY RECORDS

Records relating to academic dishonesty will be maintained by the Associate Dean of the student's assigned college to promote consistency of penalties for academic dishonesty and to ensure appropriate action against repeat offenders. In order to ensure that minor and nonrecurring infractions do not negatively impact a student's career beyond Marquette University, a student may petition to the Associate Dean of his or her academic college to have relevant academic disciplinary records expunged after the student graduates or leaves the University. The Associate Dean has sole authority to consider and to grant or deny such petitions. The University will release a student's disciplinary records to potential employers, governmental agencies, other educational institutions, or other organizations or individuals only if authorized to do so by the student in question or if compelled by law.

PROFESSIONAL ETHICS AND STANDARDS

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

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

ACADEMIC FACILITIES AND RESOURCES

LIBRARIES OVERVIEW

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

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

RAYNOR MEMORIAL LIBRARIES

The new (2003) Raynor Library holds a commanding position at the physical and intellectual center of the campus. Raynor Library, seating 1,100, is designed around the needs of its users, preserving the university's extensive traditional collections, while expanding its capacity for incorporating digital technology into access and delivery of information. The library offers over 300 online databases, thousands of books in digital format, and an ever-growing (over 26,000 titles) collection of full-text online newspapers, journals, and magazines. The primary service point in Raynor is the two-level Information Commons (IC), with over 240 networked PCs and Macs, multimedia hardware and software, and comfortable small group study spaces. The Information Desk is open 104 hours weekly and, in addition, offers research consultations by appointment, and phone, IM, e-mail and 24/7 "chat" assistance through its AskUs! services.

Raynor's first level is open 24/7 when classes are in session, and the second level and bridge are open until 2 a.m. Sunday through Thursday, offering access to workstations and comfortable, safe late-night study space. Library hours during the summer, intercessions, and holidays are posted and updated regularly on the 24-hour recorded message at (414) 288-1530.

Additional features of Raynor Library include: reference collections, circulating laptops with wireless connectivity, the Class Reserves and Media Services Desk, Browsing and Spirituality collections, and the Funding Information Center. 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 entrance to Memorial Library features a 4,800 square foot café with casual seating, popular reading materials, and wired and wireless network connections.

Memorial Library, renovated top-to-bottom in 2004 and entered via the 2nd level bridge, houses the majority of the book and journal collections. The library is open 104 hours weekly and offers a variety of seating choices for over 1,050 readers. An open stack arrangement presents over six linear miles of compact shelving for bound journals on the lower level, plus book shelving on five floors. The facilities in this library include a circulation desk, a cluster of PCs, and assigned research carrels for faculty and graduate students.

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. Interlibrary Loan provides both books and journal articles from other libraries on request and a variety of other cooperative programs assure library privileges for Marquette students at other libraries in Southeastern Wisconsin. 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.

SPECIAL COLLECTIONS AND ARCHIVES

Raynor Library also houses the Department of Special Collections and Archives and its research/exhibit area on the third floor. Its archival and manuscript collections and over 7,000 rare books include the archives of Marquette University; the papers of faculty, students, staff, and alumni; and major collections relating to Christianity among Native Americans and 20th-century Catholic social action. These include research collections for the following individuals and organizations: the Bureau of Catholic Indian Missions, Dorothy Day and the Catholic Worker movement, the National Catholic Conference for Interracial Justice, and the National Catholic Rural Life Conference. J.R.R. Tolkien's original manuscripts form a unique and notable research collection.

For more information on Raynor Memorial Libraries:

- Libraries' Web site: www.marquette.edu/library/
- Map showing campus libraries: www.marquette.edu/about/media/campusmap/campusmap.shtml
- AskUs! Phone, e-mail, or live "chat" 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 Marquette University Law School faculty and students.

The Law Library is located in the Law School in Sensenbrenner Hall. The collection is comprised of 358,484 volumes representing 197,767 print volumes and 3,500 electronic and print subscriptions. Wireless connectivity is available throughout Sensenbrenner Hall.

The Law Library maintains a comprehensive electronic and print collection of primary legal materials from all jurisdictions in the United States as well as a growing collection of international and comparative legal materials. In addition, the Law Library subscribes to BNA, the online CIS Serial Set, Hein Online, Lexis-Nexis, Loislaw, Westlaw and Wisconsin CLE materials, and is a depository of federal government information resources.

HAGGERTY MUSEUM OF ART

The Haggerty Museum of Art opened in 1984 as a home for the university's permanent collection and a center for the visual arts on the Marquette campus. The collection comprises approximately 5,000 works of art from the 16th through the 21st centuries in the areas of painting, works on paper and sculpture. The museum serves the Marquette community and the city of Milwaukee with changing exhibitions and a variety of public programs.

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

The museum's exhibition schedule incorporates eight to ten special exhibitions annually including those organized by the Haggerty Museum staff and traveling exhibitions. The museum's challenging contemporary and historical exhibitions incorporate experimental developments in the arts while maintaining the signature tradition of exploring culture, history and social change.

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 or visit www.marquette.edu/haggerty.

HARTMAN LITERACY AND LEARNING CENTER

The Hartman Literacy and Learning Center is a facility within the College of Education which supports undergraduate and graduate literacy-related programs. The center library houses a children's literature collection which is used by College of Education students as well as children and families participating in the Marquette University Family Literacy Project, a collaboration between the university and neighborhood elementary schools. Students enrolled in EDUC 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

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

The facilities of the IMC are state-of-the-art and an important component of the J. William and Mary Diederich College of Communications' broadcasting curriculum. Our facilities include two digital television studios, eight video editing suites, three audio studios, and computer graphics platforms. These advanced facilities are used as classrooms and laboratories by students pursuing a degree in Broadcast and Electronic Communication. Students also have access to these facilities as they participate in MUTV and/or MUR the student operated campus television and radio stations.

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 Mass Media Research, the Center for Materials Science and Technology, the Institute for End of Life Care Management, the Institute for Urban Environmental Risk Management, the Integrative Neuroscience Research Center, the Les Aspin Center for Government, the National Sports Law Institute, the Transportation Research Center, and the Center for Water Quality. The Office of the Provost 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

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 the 16th Street Parking Structure, 749 N. 16th St. (between Wisconsin Avenue and Wells Street). This location houses Public Safety Administration, Officer Operations, Communications Center, Preventive Services, and Student Safety Programs. Public Safety operates 24 hours a day, every day. Services can be obtained by calling (414) 288-6800. 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. University Service officers are responsible for monitoring campus buildings and property. The officers conduct walking patrols, provide authorized after-hours access to buildings, assist public safety officers and are available to provide information and assistance to students, staff and visitors. Security within the university's residence facilities is provided by 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 close to 200 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. Blue Light Phones are located at Valley Fields as well as 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*, which includes campus crime statistics and crime prevention strategies. Copies of the *Safety Resource Guide* are available from Public Safety or by calling (414) 288-7320 or can be viewed online at www.marquette.edu/dps.

CHECKMARQ/SNAPSHOT

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

Snapshot is an online Schedule of Classes students access to determine what courses to take each term. Snapshot is located at: www.marquette.edu/registrar/soc.

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 providing textbooks in alternative format, 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. The Web site for the Office of Disability Services is www.marquette.edu/oses/disabilityservices.

E-MAIL POLICY

Marquette University utilizes e-mail as one of the official means of communication with students to keep them informed of important information such as financial aid and billing data; college deadlines, events and updates; and important campus news. Each student is issued an official eMarq e-mail account for use while he or she is enrolled.

E-mail is an appropriate and preferred method for official communication by Marquette with students unless otherwise prohibited by law. The university has the right to send official communication to students by e-mail with the assumption that students will receive, read and, if necessary, act in a timely manner based upon these e-mails.

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 completing a *Transcript Request Form* available at www.marquette.edu/registrar and submitting it to the Office of the Registrar. Current students may request a transcript online via their CheckMarq account. All transcript requests should be submitted one week in advance of the date the transcript is needed.

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

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

VETERANS BENEFITS

The Office of the Registrar acts as liaison between the student and the Veterans Administration, the Wisconsin Department of Military Affairs and the Wisconsin Department of Veterans Affairs. Any student eligible to receive educational benefits under one of the various Veterans Administration programs must report to 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. Information regarding veterans' benefits may also be found at www.marquette.edu/registrar.

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

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 characterized by student learning outcomes. Students are expected to achieve these outcomes at the completion of their Core studies. Core courses in each knowledge area enable students to achieve Core learning outcomes. To learn more, please consult the Core of Common Studies Web site at www.marquette.edu/core.

Students are required to complete a minimum of 36 credit hours of core courses. College curricula may require additional courses. Each student may count one dual application course toward his or her 36 credit hour Core requirement. A dual application core course satisfies core course requirements in two knowledge areas. For example, History 71, 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.

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 in course descriptions.

CORE OF COMMON STUDIES COURSES:

Rhetoric (R) (6 credit hours):

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

Mathematical Reasoning (MR) (3 credit hours):

COSC 1000 Introduction to Computer Science
MATH 1300 The Nature of Mathematics
MATH 1390 Finite Mathematics
MATH 1400 Elements of Calculus 1
MATH 1410 Calculus for Biological Sciences
MATH 1450 Calculus 1
MATH 1451 Calculus 2
MATH 1700 Modern Elementary Statistics
MATH 2030 Problem Solving and Reasoning for Teachers
PRST 2140 Research and Statistical Methods
PSYC 2001 Psychological Measurements and Statistics
SOC 2060 Social Statistics

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

AFAS 3131 Air Force Leadership Studies 1
ARSC 2010 Perspectives on Women in Society
CRLS 1001 Introduction to Criminology
CRLS 4130 Women, Crime and Criminal Justice
ECON 1001 Introduction to Economics
ECON 2003 Principles of Microeconomics
NASC 1185 Leadership and Management
POSC 2201 American Politics
POSC 2401 Comparative Politics
POSC 2601 International Politics
PSYC 1001 General Psychology
PSYC 2101 Introduction to Life-Span Developmental Psychology for Nursing Students
PSYC 3101 Developmental Psychology: Conception through Adolescence
PSYC 3120 Developmental Psychology: Adulthood and Aging
PSYC 3201 Introductory Social Psychology
PSYC 3210 The Psychology of Prejudice (*Dual Application course: also qualified in the Diverse Cultures knowledge area*)
PSYC 3220 Human Sexuality
PSYC 3401 Abnormal Psychology
PSYC 3501 Theories of Personality
PSYC 4330 Human Factors Engineering
SOWJ 1001 Introduction to Social Welfare and Justice
SOC 1001 Principles of Sociology
SOC 2200 The Family

Diverse Cultures (DC) (3 credit hours):

| | |
|-----------|---|
| ANTH 1001 | Introductory Anthropology |
| ADPR 4600 | International and Multicultural Advertising and Public Relations |
| ADPR 4700 | Cultural Identity, Media, and World Religions |
| CEEN 3720 | Decent and Affordable Housing |
| EDUC 1210 | Introduction to Schooling in a Diverse Society |
| EDUC 1953 | The Dynamics of Cross Cultural Engagement 1 |
| EDUC 1954 | The Dynamics of Cross Cultural Engagement 2 |
| EDUC 3240 | Critical Inquiry into Contemporary Issues |
| ENGL 4810 | Race, Ethnicity and Identity in American Literature and Culture |
| ENGL 4820 | Studies in Race and/or Ethnic Literature |
| ENGL 4830 | African-American Literature |
| ENGL 4840 | Post-colonial Literature |
| FREN 3200 | French Contributions to Western Civilization |
| FREN 3300 | French Civilization |
| HEAL 1025 | Culture and Health |
| HIST 1301 | Latin America (<i>Dual Application course: Also qualified in the Histories of Cultures and Societies knowledge area</i>) |
| HIST 1401 | Africa (<i>Dual Application course: Also qualified in the Histories of Cultures and Societies knowledge area</i>) |
| HIST 1501 | East Asia (<i>Dual Application course: Also qualified in the Histories of Cultures and Societies knowledge area</i>) |
| HIST 4135 | African-American History |
| MANA 3035 | Diversity in Organizations |
| ORLE 2150 | The Culturally Diverse Organization |
| PHIL 3380 | Eastern Philosophy |
| PHIL 3780 | Africana Philosophy |
| PHTH 4512 | Culture and Disability |
| PHAS 4117 | Ethics and Diversity in Health Care |
| PSYC 3210 | The Psychology of Prejudice (<i>Dual Application course: Also qualified in the Individual and Social Behavior knowledge area</i>) |
| SOCI 2250 | Race and Family |
| SOCI 3250 | Race and Ethnic Relations |
| SOCI 4400 | Social Inequality |
| SPAN 3310 | Peoples and Cultures of Spanish America |
| SPAN 3320 | Contemporary Issues in the Hispanic World |
| SPAN 4400 | United States Latino/a Literature |
| THEO 2420 | Bridging the Racial Divide (<i>Dual Application course: also qualified in the Theology knowledge area</i>) |
| THEO 4020 | The Bible in the Jewish Community |

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

| | |
|-----------|---|
| ARSC 2970 | Arts in a Democratic Society |
| CLAS 3025 | Classical Mythology |
| COMM 2100 | Introduction to Visual Communication |
| ENGL 1301 | Honors English 1 |
| ENGL 1302 | Honors English 2 |
| ENGL 2410 | Introduction to British Literature 1 |
| ENGL 2420 | Introduction to British Literature 2 |
| ENGL 2510 | Introduction to American Literature 1 |
| ENGL 2520 | Introduction to American Literature 2 |
| ENGL 2710 | Introduction to Literature: Fiction |
| ENGL 2720 | Introduction to Literature: Drama |
| ENGL 2730 | Introduction to Literature: Poetry |
| ENGL 2740 | Reading Film as Narrative |
| ENGL 2931 | Topics in Literature and Culture |
| FREN 4500 | The Middle Ages in France: 1050-1450 |
| FREN 4510 | Sixteenth Century French Literature |
| FREN 4540 | Nineteenth Century French Literature |
| GERM 3210 | German Literature in English Translation |
| GERM 3500 | The Modern German Short Story |
| ITAL 3210 | Italian Literature in English Translation |

| | |
|-----------|---|
| JAPA 3210 | Japanese Literature in English Translation |
| LATI 3500 | Survey of Republican Latin Literature |
| MUSI 1020 | Appreciation of Music |
| MUSI 2420 | History of the Musical Theatre in America |
| SPAN 3500 | Introduction to Literary Analysis in Spanish |
| SPAN 3505 | Introduction to Literary Analysis in Spanish for Heritage and Native Speakers |
| THAR 1020 | Theatre Appreciation |

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

| | |
|-----------|---|
| HIST 1001 | Growth of Western Civilization 1 |
| HIST 1002 | Growth of Western Civilization 2 |
| HIST 1101 | Introduction to American History |
| HIST 1301 | Latin America <i>(Dual Application course: Also qualified in the Diverse Cultures knowledge area)</i> |
| HIST 1401 | Africa <i>(Dual Application course: Also qualified in the Diverse Cultures knowledge area)</i> |
| HIST 1501 | East Asia <i>(Dual Application course: Also qualified in the Diverse Cultures knowledge area)</i> |
| MISL 1800 | American Crucible: The Military and the Development of the United States |
| NASC 1022 | Sea Power and Maritime Affairs |

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

| | |
|-----------|--|
| ARSC 1020 | Major Concepts in Modern Science 1 |
| ARSC 1021 | Major Concepts in Modern Science 2 |
| BIOL 1001 | General Biology 1 |
| BIOL 1009 | Biology for Non-Science Majors |
| BIOL 1406 | Plants, Pathogens and People |
| BISC 1010 | Contemporary Issues in Nutrition |
| BISC 1015 | Principles of Human Anatomy and Physiology |
| CHEM 1001 | General Chemistry 1 |
| CHEM 1002 | General Chemistry 2 |
| PHYS 1001 | General Physics 1 |
| PHYS 1002 | General Physics 2 |
| PHYS 1003 | General Physics with Introductory Calculus 1 |
| PHYS 1004 | General Physics with Introductory Calculus 2 |
| PHYS 1007 | Survey of Meteorology |
| PHYS 1008 | Astronomy and Space Physics |
| PHYS 1009 | Earth and Environmental Physics |
| PHYS 1013 | Classical and Modern Physics with Calculus 1 |
| PHYS 1014 | Classical and Modern Physics with Calculus 2 |
| PRST 1120 | Aspects of Modern Science |

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

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

Theology (T) (6 credit hours):

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|-----------|--|
| THEO 1001 | Introduction to Theology |
| THEO 2000 | Hebrew Scriptures: Old Testament Overview |
| THEO 2010 | Old Testament: Hebrew Bible Selected Books |
| THEO 2100 | New Testament Overview |
| THEO 2110 | New Testament Selected Books |
| THEO 2200 | The Bible Through the Ages |
| THEO 2210 | Theology through the Centuries |
| THEO 2300 | Quests for God, Paths of Revelation |
| THEO 2310 | Explorations in Christian Theology |
| THEO 2320 | The Event and Meaning of Vatican II |
| THEO 2400 | Christian Discipleship |
| THEO 2410 | Christian Faith in Cultural Contexts |
| THEO 2420 | Bridging the Racial Divide <i>(Dual Application course: also qualified in the Diverse Cultures knowledge area)</i> |

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 in course descriptions.

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

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

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

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

The Honors Program Seminar Series consists of a four-year seminar sequence designed to promote the integration of knowledge gleaned from multiple content areas. The Second-Year Seminar, for example, builds upon the First-Year seminar to develop progressively the student's abilities in communication, critical reasoning, and analysis. Upon entering the Junior Year Seminar program, the student is required to use these skills to begin to make connections between a variety of fields of inquiry and/or research. This integration of knowledge culminates in the final component of the Honors curriculum, the Full Circle Seminar that is taken during the student's senior year. Please refer to the descriptions below for more detailed explanations of the Seminar Series.

HONORS PROGRAM CURRICULAR REQUIREMENTS AND NOTES

I. FOUNDATION COURSES

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

ENGLISH 1301 AND 1302: Honors English

Students who complete English 1301 and English 1302 with a grade of B or higher and who did not receive AP course credits for English 1001 and English 1002, will have satisfied the Core of Common Studies Rhetoric requirement (English 1001 and English 1002); however, the six credit hours associated with this requirement are not waived. Either English 1301 or English 1302 will also satisfy the Core of Common Studies Literature and Performing Arts requirement (i.e., one of these courses may satisfy both the Rhetoric and the Literature and Performing Arts core requirements). Students may select any approved Core of Common Studies course to complete the necessary credit hours.

PHILOSOPHY 1001: Philosophy of Human Nature

PHILOSOPHY 2310: Theory of Ethics

HISTORY 1001 AND 1002: Western Civilization

Scores of 4 or 5 on the American, European or World history tests exempt Honors students from HIST 1002 for honors.

THEOLOGY 1001: Introduction to Theology

UPPER-DIVISION THEOLOGY, must be Honors-designated; check with Honors Program office for more information

II. SEMINAR SERIES

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

HOPR 1953: First-Year Seminar

HOPR 2953: Second-Year Seminar

HOPR 3955 or 3953: Junior Seminar

HOPR 4953: Full-Circle Seminar

GENERAL FOUR-YEAR COURSE PLAN FOR HONORS STUDENTS

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

| <i>First Year</i> | | | |
|----------------------------|-----------|--------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| ENGL 1301 | 3 | ENGL 1302 | 3 |
| HIST 1001 | 3 | HIST 1002 | 3 |
| HOPR 1953 | 1 | | |
| <i>Sophomore</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| PHIL 1001 | 3 | PHIL 2310 | 3 |
| THEO 1001 | 3 | (can be taken either semester) | 3 |
| HOPR 2953 | 2 | (can be taken either semester) | 2 |
| <i>Junior</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| Upper-division Honors THEO | 3 | (can be taken either semester) | 3 |
| HOPR 3955 or a 3953 | 3 | (can be taken either semester) | 3 |
| <i>Senior</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| HOPR 4953 | 3 | (can be taken either semester) | 3 |

ACADEMIC STANDARDS

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

ASSOCIATED ACADEMIC PROGRAMS

STUDY ABROAD

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

LES ASPIN CENTER

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

COURSE DESCRIPTIONS

HOPR 1953. 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. S/U grade assessment. *Prereq: Admission to Marquette University Honors Program.*

HOPR 2953. 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. S/U grade assessment. *Prereq: HOPR 1953 and admission to Marquette University Honors Program.*

HOPR 3953. Honors Program Junior Seminar 3 sem. hrs.

Topic of broad cultural interest investigated through a variety of approaches drawn often from several disciplines. Topics vary. Guest faculty from within the university invited to conduct the seminar and encouraged to arrange as many different and experimental teaching formats as are consonant with the topic considered. Offered every term. Honors students only. Limited to 15. *Prereq: Cons. of dept. ch. and cons. of program director.*

HOPR 3955. Honors 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 1953, HOPR 2953, and cons. of program director.*

HOPR 4953. Honors Program 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 ones college career. In an effort to bring students "full circle" in the learning process, the seminar returns to selected texts and concepts studies in earlier Honors Foundation Courses and Seminars. The seminar is focused on a specific theme and challenges students' abilities to make connections surrounding this theme in different historical periods, disciplines, cultures and models of inquiry (e.g. analytic or contemplative). The explicit goal of this course is to help students begin to recognize how their education has contributed to a framework for thinking about, making decisions in, and interacting with the world. *Prereq: HOPR 1953, HOPR 2953, cons. of dept. ch., cons. of program director, and Sr. stndg. in the Honors Program.*

Helen Way Klingler College of Arts and Sciences

A college of arts and sciences, by tradition the heart of undergraduate education in the American university, is both the heart and the soul of a Jesuit university. As a College we strive to provide superior liberal and pre-professional education consistent with our mission to achieve excellence in all that we do. In our pursuit of excellence, we aspire to deliver undergraduate programs that match or exceed in quality those of the best liberal arts institutions across the country.

The students and faculty of the Klingler College of Arts and Sciences form a community of scholar-learners. Everything we do as a College serves to provide an intellectual environment that fosters excellence in educating the whole person: body, soul, heart and mind.

We seek to form students' minds through a combination of literary, philosophical and scientific training; in so doing, the Klingler College enables students to develop the various powers of the soul — memory, imagination, intellect, and will.

We seek to provide students with a foundational body of knowledge and skills in critical thinking and inquiry; in so doing, the Klingler College of Arts and Sciences prepares students for a world of change. As a recent Carnegie Corporation report titled *Liberal Arts Education for a Global Society* (2000) emphasized,

Today's graduates, over their lifetimes, will experience change at an unprecedented pace. They will have not one career but perhaps many. To cope with this kind of change, they will need self-confidence and a sense of purpose coupled with adaptability and a capacity for continuous learning. A familiarity with the body of knowledge and methods of inquiry and discovery of the arts and sciences and a capacity to integrate knowledge across experience and discipline may have far more lasting value in such a changing world than specialized techniques and training, which can quickly become outmoded.

The broad interdisciplinary inquiry that characterizes the College curricula leads students to the history and literature of diverse cultures, to the natural and social sciences, and to questions of human nature, ethics and theology; these guide students to discovery of vantage points from which to look upon the whole of human knowledge. Specialization in a major or minor delivers technical skills and competencies on which to base a career. Opportunities for study abroad and service learning challenge students to find new ways to engage the world in their liberal education. Taken altogether, the programs and education provided by the Klingler College of Arts and Sciences, by embodying the values of Marquette's mission — excellence, faith, leadership and service — seek to develop students who have the ability and desire to work effectively for a more just and more human society, a society closer to the Gospel ideals of reconciled community.

COLLEGE MISSION STATEMENT

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

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

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

DEGREES OFFERED

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

The degrees of master of arts, master of arts in Christian doctrine, 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 Klingler College of Arts and Sciences: applied economics; bioinformatics; biological sciences; chemistry; clinical psychology; computational science; computing; English; history; international affairs; mathematics education; philosophy; political science; 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 Klingler 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 and University Core of Common Studies sections of this bulletin), candidates for a degree must earn a minimum of *128 semester hours of credit* and 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 to fulfill all university, Klingler College of Arts and Sciences, and major department requirements.

BACHELOR OF ARTS COLLEGE CURRICULUM

A minimum of 48 semester hours of credit in upper-division courses must be completed for the B.A. degree. Thirty-two upper-division credits must be completed at Marquette (lower-division courses are numbered 1000 to 2999; upper-division courses are numbered 3000 to 4999).

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

| | <i>Credit Hours</i> |
|---|---------------------|
| Rhetoric | 6 |
| Foreign Language | 0-14 |
| Histories of Cultures and Societies | 6 |
| Individual and Social Behavior | 9 |
| Literature | 6 |
| Mathematical Reasoning | 6 |
| Science and Nature | 6-8 |
| Human Nature/Ethics | 9 |
| Theology | 9 |
| Senior Experience | 3 |

BACHELOR OF SCIENCE COLLEGE CURRICULUM

A minimum of 42 semester hours of credit in upper-division courses must be completed for the B.S. degree. Thirty-two upper-division credits must be completed at Marquette (lower-division courses are numbered 1000 to 2999; upper-division courses are numbered 3000 to 4999).

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

| | <i>Credit Hours</i> |
|---|---------------------|
| Rhetoric | 6 |
| Foreign Language | 0-8 |
| Histories of Cultures and Societies | 3 |
| Individual and Social Behavior | 3 |
| History or Individual and Social Behavior | 3 |
| Literature | 6 |
| Mathematical Reasoning | 6 |
| Science and Nature | 6-8 |
| Human Nature/Ethics | 9 |
| Theology | 9 |

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

COLLEGE CURRICULUM REQUIREMENTS

The requirements for the curriculum proper to the Klingler College of Arts and Sciences are listed below. **Please note that not all UCCS-approved courses fulfill the Arts and Sciences college curriculum requirements.** (For example, for the UCCS, a student may take ENGL 1001 and COMM 1100, but for the Arts and Sciences College Curriculum, ENGL 1001 and ENGL 1002 are required.) **Similarly, not all Arts and Sciences college curriculum requirements fulfill the UCCS. Students should cross-check the UCCS-approved course list with the Arts and Sciences college curriculum requirements to know whether a course fulfills requirements in both the UCCS and the College curriculum.** Note, too, that college curriculum requirements also may fulfill major/minor requirements and vice versa, but a course can fulfill only one College Curriculum requirement.

RHETORIC REQUIREMENT (6 credits)

B.A. and B.S. Degrees: All students must complete ENGL 1001 and 1002. Non-native speakers of English are required to take a placement test at Marquette during orientation. The completion of ENGL 1001 and 1002 fulfills the Rhetoric requirement in the University Core of Common Studies.

FOREIGN LANGUAGE REQUIREMENT (0-14 credits)

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

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

- Students who wish to study French, German, or Spanish as a new language may complete the requirement with three to four courses of the same language.
- Students who earn an AB or better in Elementary FREN 1002, GRMN 1002, or SPAN 1002 or 1003 may complete the requirement with Intensive Intermediate 2003 in place of Intermediate 2001 and 2002.
- Students who are placed at the Intensive Elementary Spanish 1003 level may complete the requirement by taking SPAN 1003, SPAN 2001 and 2002, or SPAN 1003 and 2003 (if the student has earned an AB or better in SPAN 1003).
- For students who wish to study Arabic, Chinese, Classical Greek, Italian, Japanese, or Latin as a new language, only the four-course sequence (Language 1001, 1002, 2001, 2002) is available.

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

- Students who wish to study Arabic, Chinese, French, German, Classical Greek, Italian, Japanese, Latin, or Spanish as a new language may complete the requirement with two courses of the same language (Elementary Language 1001 and 1002).
- Students may complete the Foreign Language Placement Exam. On the basis of their achieved score, they will be placed in the appropriate language course. Students who are placed at the Spanish Intensive Elementary level (SPAN 1003) may complete the requirement with one course (SPAN 1003). Students who are placed at the Intermediate Language level (2001 or 2003), or at a higher level, are exempt from the foreign language requirement.

MATHEMATICAL REASONING (6 credits)

B.A. Degree: This requirement may be completed by taking any two courses in mathematics, computer science, statistics or logic, *except* for a combination of two logic (PHIL 1000, 4000) or two statistics (MATH 1700, MSCS 4720, PSYC 2001, SOCI 2060) courses. MATH 105, 1100, and 1101 do not fulfill this requirement.

B.S. Degree: This requirement may be completed by taking any two courses in mathematics, computer science or statistics courses, *except* for a combination of two statistics courses (MATH 1700, MATH 4720, PSYC 2001, SOCI 2060). MATH 105, 1100, and 1101 do not fulfill this requirement.

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

LITERATURE REQUIREMENT (6 credits)

B.A. and B.S. Degrees: All students must complete six hours in literature, either in English or Foreign Languages and Literatures (original language or translation). One of these courses may be an English or Foreign Languages and Literatures course included on the list of courses fulfilling the Literature/Performing Arts requirement in the University Core of Common Studies.

SCIENCE AND NATURE REQUIREMENT (6-8 credits)

B.A. and B.S. Degrees: All students must complete two courses. Courses in BIOL, CHEM, and PHYS can be used to fulfill this requirement.

ARSC 1020 and 1021 may be used to fulfill this requirement. Only one anthropology course may be used to fulfill this requirement, and it cannot also fulfill part of the Individual and Social Behavior requirement. One of the courses taken to fulfill the Science and Nature requirement in the College curriculum may be chosen from among those courses offered by a department of the College and included on the list of courses fulfilling the Science and Nature requirement in the University Core of Common Studies.

HUMAN NATURE/ETHICS REQUIREMENT (PHILOSOPHY) (9 credits)

B.A. and B.S. Degrees: All students are required to complete PHIL 1001, 2310, and one other upper division (3000 or higher) philosophy course. The completion of PHIL 1001 and 2310 fulfills the Human Nature and Ethics requirement in the University Core of Common Studies.

HISTORIES OF CULTURES AND SOCIETIES REQUIREMENT (3-6 credits)

B.A. Degree: All students are required to complete either HIST 1001 or 1002, and at least one additional course from among the following: HIST 1001, 1002, 1101, 1301, 1401, or 1501. The completion of any of these courses fulfills the Histories of Cultures and Societies requirement in the University Core of Common Studies.

B.S. Degree: All students are required to complete either HIST 1001 or 1002.

Note: B.S. students are required to complete either a second course offered by the History Department or a second individual and social behavior course.

INDIVIDUAL AND SOCIAL BEHAVIOR REQUIREMENT (3-9 credits)

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

B.S. Degree: Students are required to complete one course in an individual or social-behavior science in the fields listed above.

Note: B.S. students are required to complete either a second course offered by the History Department or a second individual or social-behavior course.

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

THEOLOGY REQUIREMENT (9 credits)

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

SENIOR EXPERIENCE

B.A. Degree: All students must complete a three-hour Senior Experience. This Senior Experience can be taken in either a seminar or lecture format. Senior Experience courses are identified in the Notes section of CheckMarq. A list is also available from the College office.

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.

The Bachelor of Arts degree is awarded in Africana Studies; Anthropology; Classical Languages, Classical Studies; Criminology and Law Studies; Economics; English Literature, Writing-Intensive English; French, German; History, American Military History; International Affairs; Philosophy; Political Science; Psychology; Social Welfare and Justice, Sociology; Spanish Language and Literature, Spanish for the Professions; Theology, Theology for Catholic School Ministry; and Women's and Gender Studies.

The Bachelor of Science degree is awarded in Applied Mathematical Economics; Biological Sciences, Biology for the Professions, Physiological Sciences, Biochemistry and Molecular Biology; Chemistry, Chemistry for the Professions; Mathematics, Computer Science, Computational Mathematics; and Physics.

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.

Overlap Limit: Where applicable, students may overlap credits between majors and between majors and minors with an overlap limit of two courses (6-8 credit hours). At least 15 hours in the major and nine hours in the minor must be completed at Marquette.

INTERDISCIPLINARY MAJORS AND MINORS

The Klingler College of Arts and Sciences is committed to the fundamental goal of integrating diverse areas of learning into a coherent whole. This integration lies at the heart of the liberal arts education provided at Marquette University. Achieving this goal involves two steps. First, as part of the College curriculum, students are required to study material from the wide variety of disciplines comprising the arts and sciences. Second, by majoring and perhaps minoring in

a specific discipline of their choice, students pursue learning in more depth and are then challenged to integrate this into their broader understanding of the world acquired through the College curriculum. For students whose interests go beyond the boundaries of traditional disciplines, the College offers the interdisciplinary majors and minors listed below.

In addition, students for whom particular interests may be better served by a flexible grouping of courses from several areas can create an individualized interdisciplinary major or minor. Such students should consult the College office in order to 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 list of courses to be included, and the sequence in which they will be taken. Such proposals, as well as any subsequent modifications, must be approved by the College's associate dean for academic affairs.

INTERDISCIPLINARY MAJOR/MINOR IN AFRICANA STUDIES

Students who pursue the degree in Africana Studies come from all racial, ethnic, and cultural backgrounds. They are unified by a common desire to enlarge and enrich their intellectual horizons by learning about the artistic, economic, historical, literary, philosophical, political, economic, sociological, scientific, and theological contributions of people of African descent to U.S. society and culture. Students take core courses in English, history, philosophy, sociology and theology and augment these with at least five electives to complete the major.

The major consists of five designated core courses and five electives for a total of 30 credit hours. The minor consists of three designated core courses and three electives for a total 18 credit hours.

Core Course Requirements for the major: (15 credits total): Students must take five of the following courses, including at least one course from each area:

- A. ENGL 4810: Race, Ethnicity, and Identity in American Literature and Culture, or ENGL 4820: Studies in Race and/or Ethnic Literature, or ENGL 4830: African American Literature
- B. HIST 1401: Africa or HIST 4135: African American History
- C. SOCI 3250: Race and Ethnic Relations or SOCI 4250: African American Social Thought
- D. THEO 4490: Malcolm, Martin, Baldwin and the Church or THEO 4490: Christian Faith and Racial Justice

Elective Courses for the major and minor (15 credits total): Any of the core courses not taken as a core course may be taken as an elective. "Special Topics," seminars or colloquia courses with an Africana Studies focus will also be considered for approval by the program director.

ANTH 3100; ARSC 3986; CEEN 3720; COMM 4500; CMST 3410, 4400; ECON 4012; ENGL 4840; FREN 3310; HEAL 1025; HIST 4140, 4350, 4450; MANA 3035; MUSI 2440; PHAS 4117; PHIL 3780; POSC 4281, 4291, 4361; PSYC 3210; SOCI 2250, 3550, 4100, 4270, 4400; SOWJ 1001; SPAN 3320, 4400; SPPA 4610.

Students are encouraged to develop 5-course concentrations in areas of particular interest. Possibilities include a disciplinary focus such as literature or sociology or an area focus such as American urban studies. Concentrations should be designed with a major advisor and require approval by the director of the program.

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 2003, 2004, 3003, 3004, 4060, 4065.

Fifteen hours in math: MATH 1450, 1451, 2450, 4710, or 4720.

Electives:

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

Six hours in math: Two of the following: MATH 3100, 2451 or 4500, 4630, 4650, 4700, 4760, 4780.

INTERDISCIPLINARY MAJOR/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. The major consists of 10 courses or 30 credit hours; the minor consists of 6 courses or 18 credit hours. In addition, students must fulfill the background requirements for the major or minor.

Requirements for the Interdisciplinary Major in International Affairs:

Background requirements: two courses in history (either HIST 1001 or 1002; and one course from HIST 1301, 1401, or 1501); ECON 2003 and 2004; POSC 2401 and 2601; one course in statistics such as MATH 1700, MANA 2028, PSYC 2001, or SOCI 2060; 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 (2002 or 2003) level, and preferably to minor in a foreign language.

Program Requirements:

- A. POSC 4601, 4611, 4621, and 4631.
- B. An upper division course in international economics. ECON 4040 is recommended for all students except those with a concentration in international economics. ECON 4044, 4045 or 4046 are recommended for students with a concentration in international economics.
- C. INIA 4997. (Usually completed during the student's last spring semester at Marquette.)
- D. 12 hours from one of the following subfields. At least three of the courses must be numbered 3000 or above. Please note that other courses may satisfy subfield requirements (especially for students who study abroad) but that any substitutions must be approved by the INIA coordinator.
 1. Area Studies (Students in area studies must choose courses in one area.)
 - European Studies: ANTH 3370; HIST 3230, 3232, 3235, 3295, 3297, 4249, 4252, 4255, 4260, 4262, 4264, 4271, 4290; POSC 4406, 4501, 4511, 4711.
 - Asian Studies: HIST 1501, 4500, 4555; POSC 4521, 4531, 4551, 4731; PHIL 3380; THEO 4530, 4540; JPNS 3200.
 - Latin American Studies: ANTH 3242; HIST 1301, 4350, 4355; POSC 4541, 4741; SPAN 3310, 4600, 4610, 4640.
 - Third World Studies: ANTH 3360, 4144, 4316; ENGL 4840; HIST 1301, 1401, 3455, 4355, 4450, 4555; POSC 4521, 4541, 4551, 4561; THEO 4530, 4540.
 2. Cross-Cultural Studies: FREN/GRMN 3200 and FREN/SPAN 3300; JPNS/ITAL 3200; SPAN 3310; ADPR 4700; ANTH 2101, 2203, 3312, 3370, 4316; CMST 3410; ENGL 4810, 4840; PHIL 3380, 3660; POSC 4431, 4561; SOCI 4000, 4400; THEO 2410, 4210, 4330, 4370, 4405, 4420, 4500, 4510, 4520, 4530, 4540.
 3. International Economic Relations: Students in this concentration are required to complete 12 hours of coursework in addition to the INIA major's core requirement of a three hour upper division course in international economics. The combined 15 hours must include: ECON 4044 and 4046; one additional international economics course (ECON 4016, 4045, 4080 or relevant ECON 4953); and two international economic relations courses (BULA 3040; ECON 4016, 4045, 4080; FINA 4040; MANA 4040; MARK 4040; POSC 4406, 4641)
 4. International Political-Military Relations: HIST 3118, 3127, 3232, 3295, 4113, 4114, 4255, 4298; JOUR 4700; POSC 4376, 4431, 4701, 4711, 4721, 4731, 4741.
 5. International Communication: Students in this concentration must complete at least two courses from the College of Communication. COMM 4200; JOUR 4700; CMST 3410, 4270; POSC 4376, 4406, 4421, 4431, 4561, 4701; ECON 4046; HIST 4113, 4114, 4298.
 6. PEACE STUDIES: Students in this concentration must complete two courses from each division. A) Preventing War: CMST 3100, 3410; HIST 3127, 3295, 3297, 3455, 4298; POSC 4551, 4721; B) Building Peace: ECON 4016, 4045; ENGL 4810; HIST 3235; POSC 4561, 4711, 4731; THEO 4500, 4510, 4530.
 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 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 six 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 2003 and 2004; POSC 2401 and 2601.

Program Requirements:

A. POSC 4601, 4611, 4621, and 4631.

B. An upper division course in international economics. ECON 4040 is recommended.

C. INIA 4997. 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 six hours of the credits counted to fulfill an INIA minor may be counted toward any other major or minor.

INTERDISCIPLINARY MAJOR/MINOR IN WOMEN'S AND GENDER STUDIES

Marquette University's Women's and Gender Studies major is a primary or secondary major that promotes a critical, feminist, and cross-cultural understanding of gender and power in a global context and across disciplinary boundaries. It provides students with the knowledge and skills necessary for just and equitable leadership in professional, civic, and religious roles. Students will gain: knowledge and skills for understanding how gender has shaped the world around us and the ways we make sense of it; knowledge and skills for understanding how sexism operates in a dynamic with other systems of oppression historically and in contemporary contexts; knowledge and skills for recognizing the diversity of women's experiences and accomplishments; knowledge and skills for recognizing the diversity of gendered experiences and perspectives among men and women; and a disposition to embrace gender diversity and to work for justice. Thirty credit hours are required for the major.

Suggested Major Curriculum:

The WGST major can be either a primary or a secondary major.

Introductory course: WGST 1001 (3 credit hours)

4 Exploratory Courses (Totaling 12 credit hours)

Exploratory courses enable students to explore WGST issues as they arise within particular disciplines.

Examples include:

ANTH 3330: Women and Men in Cross-Cultural Perspective

EDUC 1210: Introduction to Schooling in a Diverse Society

ENGL 4860: Survey of Women's Literature

HEAL 1025: Culture and Health

PHIL 3770: Feminist Philosophy

PSYC 3210: Psychology of Prejudice

THEO 4030: Women in the Bible

4 Integrative Courses (Totaling 12 credit hours)

Integrative courses combine theory with practice or link distinct subjects together.

Examples include:

COMM 4100: Mass Media and the American Family (offered spring term)

CRLS 4130: Women, Crime and Criminal Justice (offered occasionally)

ECON 4953: Economics of the Family

HIST 4150: Childhood in America (offered every other year)

POSC 4361: Politics of Race, Ethnicity and Gender (offered every two years)

PSYC 3550: Psychology of Gender Roles (taught annually)

SOCI 3550: Race, Gender and Medicine (offered annually)

Capstone course WGST 4997 (3 credit hours): In the senior capstone course you will integrate your diverse academic experiences within WGST and devise a community-based project that meets your unique interests.

Requirements for the WGST minor: WGST 1001, plus 15 credit hours, including at least one exploratory course and at least one integrative course, with courses distributed among at least three disciplines.

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 3410; CHNS 3200, JPNS 3200, 3210; PHIL 3380; THEO 4530, 4540

History and Society: HIST 3127, 4500, 4555; POSC 4521, 4531, 4551, 4731; appropriate offerings of SOCI 4997

Any substitutions must be approved by the program coordinator.

INTERDISCIPLINARY MINOR IN BROAD FIELD SOCIAL SCIENCE

The Interdisciplinary Minor in Broad Field Social Science is open only to students majoring in education with a second major in history, political science (only Track I: Politics, according to the directions given in the Political Science section of this bulletin), psychology, or sociology. This minor allows students to prepare for the license extension offered by the Wisconsin Department of Public Instruction for Broad Field Social Science. In order to complete the minor, students must take seven courses from among only those in the six groups of courses listed below. Students' courses for the minor must come from five of the six groups. None of the seven courses taken for the minor can be in a group that corresponds to the student's major. Group I comprises HIST 1001, 1002, and 1101. Group II comprises ANTH 1001, 2101, and 2203. Group III comprises SOCI 1001, 2200, and 3200. Group IV comprises PSYC 1001, 2101, and 3201. Group V comprises POSC 2201, 2401, and 2601. Group VI comprises ECON 1001, 2003, and 2004.

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 18 hours. Required courses: One theology course from: THEO 2210, 4200, 4330, 4340; HIST 4130; one course from designated electives in philosophy or English; and three other courses from approved upper-division offerings, with at least two of the four areas represented. For more specific information, consult the program coordinator.

INTERDISCIPLINARY MINOR IN ENVIRONMENTAL ETHICS

Students who opt for this minor will acquire the intellectual resources they need to reflect on the ethical dimensions of environmental issues. Five courses develop the knowledge and skills in the natural sciences and in the theological and philosophical traditions that are relevant to the minor. It culminates in a capstone seminar in which the ethical questions pertaining to a particular environmental problem are identified and approaches to its resolution are developed. When appropriate and feasible, the capstone 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. Consult program director to declare and track courses toward this minor as early as possible.

Required Courses (18 credit hours):

INEE 4997; BIOL 2401/3401 or PHYS 1009 or CEEN 3510 for CEEN majors; PHIL 3350 or THEO 4440; At least one of the following: ECON 4016; ENGL 4931 (Literature and the Environment); JOUR 4330.

Recommended Complementary Courses:

ANTH 2203, THEO 4430.

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 2310, and either THEO 2400 or 4400.
- II. *Applied ethics (two courses required, at least one from philosophy)*: PHIL 4320, 4330, 4335; THEO 4440, 4450, 4490; COMM 3900.
- III. *Contemporary Interfaces with Ethics (two courses required)*: PHIL 3350, 3710, 3730, 3740, 3750 3751, 3770 3780; POSC 2801; SOCI 3200, 4130; THEO 4420; MARK 4070; MANA 3002; COMM 4400; HEAL 2100; and additional courses subject to special approval by the director of the Center for Ethics Study.
- IV. *Capstone experience (required)*: INET 4953.
- V. *Other courses subject to approval of program director.*

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 3400-3401 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 2200—Should be taken before other courses in the minor, or at least as soon as the student has selected the minor.

INFS 4953—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 3330; HIST 4150, 4245; THEO 4410; PHIL 3730; HEAL 1025; SOCI 2250; ENGL 4710.

Category II Family as System within Society

COMM 4100; EDUC 1220 (only for education majors); PSYC 2101, 3550 (for non-PSYC majors), 4720; SOCI 4300, 4450, 4931; CMST 4130, 4953; PSYC 3101, 3120, 4720 (for PSYC majors).

Category III Family as Resource for Human Needs

CMST 4110; CRLS 2100, 4640; EDUC 4217, 3100; PSYC 3130, 3410; SOWJ, 3370, 3001. NURS 3400, 3401, (only for nursing students). PHTH 7515 (only for physical therapy students).

Some additional courses may be acceptable toward the requirements.). See the program coordinator to receive prior approval for any courses not listed above or for any substitutions.

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 five courses required by tiers B-D can be taken in any single discipline.

Requirements:

A. *Conceptualizing Justice and Peace*: ARSC 2010 (3 credit hours).

Five courses selected from tiers B-D.

B. *Bridging Social Communities (at least one course selected from the following)*: ADPR 4700; ANTH 2101, 3330, 3360; CMST 3100, 3410, 4400; ENGL 4810, 4820; HIST 4135, 4245; PHIL 3350, 3730, 3770, 3780; PSYC 3201, 3210; SOWJ 2200; THEO 4400, 4500, 4510, 4520, 4530, 4540.

C. *Promoting Social and Economic Justice (at least one course selected from the following)*: ANTH 2203, 4316; ECON 4016, 4045; HIST 4255, 4350; PHIL 3660; POSC 4216, 4361, 4406, 4431, 4501, 4521, 4531, 4541, 4561, 4621, 4851; SOCI 3250, 4400; SOWJ 1001, 3001; THEO 4405.

D. *Resolving Violent Conflict (at least one course selected from the following)*: CRLS 4640, 4660; HIST 3235, 3295, 3297, 3455, 4298; POSC 4551, 4601, 4611, 4631, 4711, 4721, 4731, 4741; THEO 4420.

E. *Capstone Seminar in Justice and Peace*: INJP 4997 (3 credit hours).

Note: Relevant upper-division independent study, special topics, and internship courses can count towards the course requirements in tiers 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 4952

Three hours from HIST 3210, 4212 4213,

Three hours from ENGL 4410, 4620; Medieval offerings of ENGL 4931; FREN 4500, FOLA 3210 4931; GRMN 4525; SPAN 4500.

PHIL 3620.

THEO 4230.

Electives:

Six hours from the following:

Appropriate offerings of HIST 4931 4953, as well as courses listed under required courses

English courses listed under required courses

Language courses listed under required courses

PHIL 3625; appropriate offerings of PHIL 4931

THEO 4220, and appropriate offerings of THEO 4290

Any substitutions must be approved by the program coordinator.

INTERDISCIPLINARY MINOR IN PUBLIC HISTORY

The Interdisciplinary Minor in Public History allows students to examine the ways the historic method is applied outside of the classroom. For students seeking a career in public history, the minor will better prepare them for advanced study in specialized programs. In addition to history courses, students can explore related disciplines such as anthropology and can take specialized courses in fields such as marketing, management, or advertising. Students interested in this minor should see the public history adviser in the Department of History. As students select courses to meet the requirements for the University Core of Common Studies (UCCS), they should pay close attention to the list of recommended courses for this minor. *Prerequisites for enrolling in the minor are HIST 1101; or HIST 2101 and 2102.* Recommended courses that satisfy UCCS requirements include ANTH 1001; COMM 1100 or ENGL 1002; ECON 2003; and a statistics course (MANA 2028; MATH 1700; PSYC 2001; SOCI 2060).

The minor requires 21 credit hours.

A. Required courses in history (12 credit hours): HIST 4100, 4101 and 4986.

One upper division history course appropriate to the public history area in which the student envisions working (e.g., HIST 3101, 3104, 4135, 4953 or 4955, depending on the relevance of the topic).

B. Three elective courses* (9 credit hours) selected from among the following: ACCO 2030, 2031; ADPR 1400; ANTH 3201, 3250; ENGL 4931 (Writing for Non-Profit Agencies); ENTP 3001; MANA 3001, HURE 3001, 4080 (HURE 3001 is a prerequisite); MARK 3001, 4020 (MARK 3001 is a prerequisite).

* Only two business administration courses may be included among the three electives. All courses should be selected with the approval of the public history advisor.

History majors pursuing the Interdisciplinary Minor in Public History should note that only two courses may overlap between a major and a minor in the Klingler College of Arts and Sciences.

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 at least one course from each of the following four areas:

ECON 4010, 4012.

POSC 4281, 4291.

ANTH 3100; SOCI 4270; SOWJ 3001.

HIST 4140 and appropriate offerings from 4931, 4953, 4955.

In addition, students can choose their remaining elective courses from the following: CEEN 4340; CRLS 3300, 3600, 4931; ECON 4016; HIST 4135; JOUR 4140, 4310; PHIL 3730; REAL 3001; SOCI 3200, 3250, 4100, 4720. Please see approved list from the program coordinator. An interdisciplinary urban affairs major can be created for individual students in consultation with the program coordinator. A proposal for an interdisciplinary urban affairs major must be approved by the college's associate dean for academic affairs.

PROFESSIONAL MINORS

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

ELECTIVE COURSES

Of the 128 credit hours required for a degree, those not fulfilling UCCS, college curriculum 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 Klingler College of Arts and Sciences, provides advice and service to students who wish to enter dental, law, medical or other health-related professional schools. Interested students should register with the Office of Pre-Professional Studies, Marquette Hall, 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* at www.ADEA.org.

DENTAL ADMISSION TEST

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

There are eight sections on the DAT, including quantitative reasoning, reading comprehension, biological sciences, general chemistry, organic chemistry, general sciences, perceptual ability and an overall academic average. Prior to taking the DAT, students should complete at least Biology 1001, 1002, 2001 and 4101 (or BISC 3213). Most students take the DAT between June after their sophomore year and April of their junior year.

APPLICATION

Application is made through the American Association of Dental Schools Application Service (AADSAS). AADSAS applications are available online at www.adea.org/aadsas.

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

PRE-MEDICINE

COURSE REQUIREMENTS

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

| | | | |
|-------------------|---------------------|-------------------|------------------|
| Biology | 8-12 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

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

The MCAT is divided into four sections: physical sciences, biological sciences, verbal reasoning and a writing sample. Before taking the MCAT, students should complete Chemistry 1001, 1002, 2111, 2112; Biology 1001, 1002, 2001, 4101, (or BISC 3213); Physics 1001 and 1002 or 1003 and 1004. A physiology course is also recommended for the MCAT. Most students at Marquette take the MCAT in April or May of their junior year.

APPLICATION

Application for most U.S. allopathic medical schools is made through the American Medical College Application Service (AMCAS). More information can be found at www.aamc.org/amcas. Students applying to U.S. osteopathic medical schools use the American Association of Colleges of Osteopathic Medicine Application Service (AACOMAS). More information can be found at www.aacom.org.

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

PRE-LAW

COURSE REQUIREMENTS

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

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

LAW SCHOOL ADMISSION TEST

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

APPLICATION

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

ACADEMIC REGULATIONS

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

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

ACADEMIC HONESTY

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

- copying material from a web page and submitting it as one's own work;
- quoting extensively from a document without making proper references to the source;
- the illegitimate use of materials in any form during a quiz or examination;
- copying answers from the quiz or examination paper of another student;
- plagiarizing (submitting as one's own ideas the work of another) or falsifying materials or information used in the completion of any assignment which is graded or evaluated as the student's individual effort;
- obtaining, through theft, bribery, or collusion, or otherwise improperly securing, an examination paper prior to the time and date for the administration of the examination;

- use of an examination paper previously administered (for example, during an earlier semester) without the consent of the instructor who authored the examination;
- furnishing credentials that have been earned by another person, or falsifying records, transcripts, or other academic papers in order to falsely present one's academic position;
- impersonating a candidate at an examination or availing oneself of such an impersonation;
- intentionally interfering with any person's scholastic work (e.g., by damaging or stealing laboratory experiments, computer files, or library materials);
- submitting the same work for more than one course without the consent of the instructors of each course in which the work is submitted;
- aiding or abetting any such offenses.

In instances where academic dishonesty is suspected, instructors are responsible for initiating investigations into the alleged violation and students are responsible for cooperating fully with the investigatory process. Students and faculty should refer to the University procedures on academic honesty in the University section of this bulletin for specific details. Procedural information for faculty is also available in the Klingler College of Arts and Sciences Faculty Guide to College Policies (available online and from the College office).

ADVISERS

Upon entering the Klingler College of Arts and Sciences, a student is assigned a pre-major adviser. The student must consult with this adviser (or the Arts and Sciences Advising Center) 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 Klingler 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 his or her 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 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. 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. The Klingler College of Arts and Sciences defines unavoidable absences as those due to debilitating illness, personal emergency, or, with prior approval, participation in university-sanctioned athletic competitions. Please, refer to the Undergraduate Attendance Policy in the University section of this bulletin for more details.

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, IE, X, and IX) in all Arts and Sciences courses is administered by the Klingler 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. Courses in which a CD or D grade was earned may be repeated. In such cases, only the grade earned in the repeated course will be counted in the cumulative grade point average, but both grades will appear on the official transcript; credit will be given only once. Cognate requirements can be completed at a CD or D grade.

TRANSFER CREDIT POLICY

In accordance with the University Transfer Credit Policy, the Klingler College of Arts and Sciences will grant credit for courses taken for a grade and completed at a C or better at a regionally accredited college or university. Only credit will transfer, not grades. Courses completed in a quarter-hour system will be converted to semester credits, therefore reducing the total credits accepted by one-third. A Marquette equivalent will be specified for each transferable course. Courses awarded as 9290-9299, (lower division) or 9390-9399 (upper division) indicate transferable credit for which there is no discernible Marquette equivalent. Courses awarded as 9290-9299 or 9390-9399 will count toward the degree and may fulfill UCCS, college curriculum, or major/minor requirements; however, they will not fulfill any requirement where a specific course number (i.e. PHIL 1001 or THEO 1001) 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 Klingler 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. All students to whom conditions have been specified will be subject to committee review and academic dismissal should they fail to fulfill the specified terms.

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

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 and enriching 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 Klingler 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 2012, 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 GPA 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 satisfactory score on the Dental Admission Test (DAT), as determined by the Marquette Dental Admissions Committee.

Students who fail to meet the academic requirements in any semester will be placed on probation the following semester. Two 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 Klingler 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 Klingler 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-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, Social Welfare and Justice, Sociology, Spanish, Theology, Writing Intensive English.

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

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 2012, after completion of the third year of undergraduate studies (and having earned at least 99 credits) in the Klingler College of Arts and Sciences. Students will maintain a place in the Law School by fulfilling the following requirements:

- Enroll in spring semester Freshman Scholars Seminar (1 credit), "Lawyers in American Society."
- Attain a minimum cumulative 3.400 GPA in the undergraduate program, by the time of application/entrance to the Marquette University Law School.
- Earn a score on the Law School Admissions Test that is equal to or greater than the median of the preceding year's entering class.
- 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 Klingler 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 1953)

This is a one-credit seminar wherein a small group of students (typically 10) meet with their faculty advisor once a week for the first 12 weeks of the fall semester. Students benefit from the two components of the seminar. First, students are encouraged to deepen the intellectual skills required to be successful at the university level. Each course meeting centers on the discussion of a short text, using specific rules of inquiry and dialogue that emphasize argumentation, listening, and finding evidence. The second component addresses issues of academic advising and adjustment to university life. Potential topics include course selection, time-management, test taking, life in the dorm, campus resources, socioemotional adjustment to the move from home, choosing a major, etc. The faculty leader serves as each student's pre-major advisor.

STUDY ABROAD PROGRAMS

Students in the Klingler College of Arts and Sciences are encouraged to incorporate international study with their curriculum at Marquette. Study abroad programs offer students an opportunity to integrate academic coursework with firsthand knowledge of other cultures. Marquette offers a diverse palette of academic year, semester, summer, and other short-term programs. Advisors in the Klingler College of Arts and Sciences work closely with the Office of International Education and with students to determine programs that best fit with students' curricular needs and personal and financial interests.

Students are encouraged to inquire about study abroad opportunities as early as freshman year with their advisors and with the Office of International Education.

All Marquette students seeking academic credit from an overseas institution toward their degree at Marquette University are required to follow the study-abroad policies and procedures as outlined in the Academic Programs section of this bulletin, in the study abroad handbook and at www.marquette.edu/studyabroad. This applies to all students regardless of the length of the term abroad and the sponsoring institution.

STUDENT ORGANIZATIONS AND HONOR SOCIETIES

The Helen Way Klingler College of Arts and Sciences offers students a wide array of co-curricular opportunities to extend the value of their education. Student organizations and honor societies affiliated with the college and/or advised by one of our faculty members include:

STUDENT ORGANIZATIONS

Anthropology Club
 Arnold Air Society (*Professional Air Force ROTC Service Organization*)
 Arts and Sciences Student Council
 Cadet Rangers
 Cardinal Bellarmine Society
 Caribbean Influence through Dance (*C.I.T.D.*)
 Catholic Outreach
 Cercle Francais (*French Club*)
 Classical Fencing Society
 Colleges Against Cancer (CAC)
 Computer Science Club
 Criminology and Law Society
 Darfur Action Coalition
 Gay Straight Alliance
 International Affairs Society
 Italian Club
 Knights of Columbus
 Marquette Economics Association
 Marquette Linux Users Group
 Marquette Writing Society
 Math Club
 Muslim Students Association
 Naval ROTC Rifle Drill Team
 Philosophy Club
 Pre-Law Society
 Semper Fi
 Silver Wings (*Professional Organization Supporting the US Air Force*)
 Society of Physics Students
 Student Affiliates of the American Chemical Society (SAACS)
 Students for an Environmentally Active Campus (SEAC)

HONOR SOCIETIES

Alpha Epsilon Delta (Pre-Health Professions Honor Society)
 Alpha Kappa Delta (*International Sociology Honor Society*)
 Alpha Sigma Nu (*National Jesuit Honor Society*)
 Delta Phi Alpha (*German Honor Society*)
 Eta Sigma Phi (*Classics Honor Society*)
 Evans Scholars
 Honors Program Student Association
 Omicron Delta Epsilon (*International Honor Society for Economics*)
 Order of Omega (*Greek Honor Society*)
 Phi Alpha Theta (*History Honor Society*)
 Phi Beta Kappa
 Phi Sigma Tau (*Philosophy Honor Society*)
 Pi Delta Phi (*French Honor Society*)
 Pi Gamma Mu (*International Honor Society in Social Science*)
 Pi Mu Epsilon (*Math Honor Society*)
 Pi Sigma Alpha (*Political Science Honor Society*)
 Psi Chi (*Psychology Honor Society*)
 Rho Lambda (*Greek Honor Society*)
 Sigma Delta Pi (*Spanish Honor Society*)
 Sigma Tau Delta (*English Honor Society*)

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 1001 | 3 | ENGL 1002 | 3 |
| History | 3 | History | 3 |
| Natural Science | 3-4 | Natural Science | 3-4 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| Social-Behavioral Science | 3 | Social-Behavioral Science or THEO 1001 | 3 |
| 15-17 | | 15-17 | |

Sophomore

| FIRST TERM | 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 1001 | 3 | Major or electives | 6 |
| Social-Behavioral Science or THEO 1001 | 3 | | |
| 15-16 | | 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 2310 | 3 | Major and electives | 6-9 |
| Major and electives | 6-9 | Social-Behavioral Science | 3 |
| 14-18 | | 15-18 | |

Senior

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

BACHELOR OF SCIENCE (FOR BIOCHEMISTRY/MOLECULAR BIOLOGY MAJORS)

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|------------------------|-----------|
| BIOL 1001 | 3 | BIOL 1002 | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| MATH 1450 | 4 | MATH 1451 | 4 |
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| | 17-18 | | 17-18 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-----------|---|-----------|
| CHEM 2111 or 2113 | 4 | BIOL 4101 | 3 |
| PHYS 1001 or 1003 | 4 | CHEM 2112 or 2114 | 4 |
| HIST 1001 or 1002 | 3 | PHYS 1002 or 1004 | 4 |
| PHIL 1001 | 3 | PHIL 2310 | 3 |
| THEO 1001 | 3 | History/Social-Behavioral Science | 3 |
| | 17 | | 17 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|------------------|-----------|
| BIOL 2301 | 3 | BIOL 3102 | 3 |
| CHEM 4431 * | 3 | BIOL 2201 | 3 |
| Theology (second level) | 3 | CHEM 2210 | 4 |
| Literature | 3 | Literature | 3 |
| Elective | 3 | Elective | 3 |
| | 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 | | |
| | 15-16 | | 15 |

*Many students, including those continuing on to graduate school, should consider the option of two terms of physical chemistry (CHEM 4433 and 4434) which requires an additional term of calculus (MATH 2450). Students who take CHEM 4433, 4434, and MATH 2450 are required to take only one additional elective in biological sciences, chemistry or mathematics.

**BIOL or CHEM 4995 may be substituted.

BACHELOR OF SCIENCE (FOR BIOLOGICAL SCIENCES MAJORS)

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|--------------------------|-----------|
| BIOL 1001 | 3 | BIOL 1002 | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| Social-Behavioral Science | 3 | MATH 1410 or 1450* | 3-4 |
| | 16-17 | | 16-18 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|-------------------------|-----------|
| BIOL 2301 | 3 | BIOL 2201 | 3 |
| CHEM 2111 or 2113 | 4 | CHEM 2112 or 2114 | 4 |
| PHIL 1001 | 3 | HIST 1001 or 1002 | 3 |
| Literature | 3 | Literature | 3 |
| MATH/Computer elective* | 3-4 | THEO 1001 | 3 |
| | 16-17 | | 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|--|-----------|
| Biological Sci. elective or laboratory course**6-7 | | Biological Sci. elective or laboratory course**6-7 | |
| PHYS 1001 or 1003 | 4 | PHYS 1002 or 1004 | 4 |
| PHIL 2310 | 3 | History/Social-Behavioral Science | 3 |
| Elective | 3 | Elective | 3 |
| | 16-17 | | 16-17 |

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 |
| | 15-16 | | 15-17 |

* MATH 1410 or 1450 and one other MATH or COSC course.

** BIOL 4101 is strongly recommended as a Biological Sciences elective for students intending to apply to medical, dental, graduate or pharmacy school.

*** 128 credits are required for graduation.

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 1001 | 3 | BIOL 1002 | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| PSYC 1001 | 3 | MATH 1410 or 1450 | 3-4 |
| | <hr/> 16-17 | | <hr/> 16-18 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-----------|-------------------------|-----------|
| CHEM 2111 or 2113 | 4 | BIOL 2201 | 3 |
| BIOL 2301 | 3 | CHEM 2112 or 2114 | 4 |
| MATH 4740 | 3 | Literature | 3 |
| Literature | 3 | THEO 1001 | 3 |
| PHIL 1001 | 3 | HIST 1001 or 1002 | 3 |
| | <hr/> 16 | | <hr/> 16 |

Junior*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-----------|---|-----------|
| PHYS 1001 or 1003 | 4 | BIOL 3501 | 3 |
| BIOL 3701 | 4 | BIOL 3502 | 3 |
| BIOL 3702 | 3 | PHYS 1002 or 1004 | 4 |
| PHIL 2310 | 3 | History/Social-Behavioral Science | 3 |
| Elective | 3 | Diverse Cultures elective | 3 |
| | <hr/> 17 | | <hr/> 16 |

Senior*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------------|-------------|--|-------------|
| BISC 2125 or 2135 | 4 | BISC 2136** | 2 |
| Biological Sciences elective*** | 6-7 | Biological Sciences electives*** | 6-7 |
| Theology (second level) | 3 | PHIL 4335**** | 3 |
| Elective | 3 | Theology (third level) | 3 |
| | <hr/> 16-17 | Elective | 3 |
| | | | <hr/> 17-18 |

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

** BISC 2136 is recommended but not required.

*** BIOL 4101 is strongly recommended as a Physiological Sciences elective for students intending to apply to medical, dental, graduate or pharmacy school.

**** THEO 4450 is interchangeable with PHIL 4335 for Medical Ethics.

BACHELOR OF SCIENCE (FOR BIOLOGY FOR THE PROFESSIONS MAJORS)

Open to undergraduate students in the College of Education as a second major for students who wish to teach high school.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------|-----------|------------------|-----------|
| BIOL 1001 | 3 | BIOL 1002 | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| EDUC 1210 | 3 | EDUC 1220 | 3 |
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| | 16-17 | | 16-17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------|-----------|--------------------------|-----------|
| BIOL 2301 | 3 | BIOL 2001 | 3 |
| CHEM 2111 | 4 | BIOL 2201 | 4 |
| EDUC 2227 | 3 | EDUC 2037 | 3 |
| HIST 1001 or 1002 | 3 | PHIL 1001 | 3 |
| THEO 1001 | 3 | HIST 1301, 1401, or 1501 | 3 |
| | | EDUC 2037 | 3 |
| | 16 | | 19 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------------------|-----------|-----------------------------|-----------|
| Biological science elective | 3 | Biological science lab | 3 |
| EDUC 4217 | 3 | Biological science elective | 3 |
| MATH 1700 | 3 | EDUC 4297 | 4 |
| Literature | 3 | EDUC 3240 | 3 |
| PHYS 1001, 1008 or 1009 or ARSC 1020 | 3 | THEO 2000 | 3 |
| PHIL 2310 | 3 | | |
| | 18 | | 16 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|-------------|-----------|
| BIOL 3406, 3701, or 3801 | 3-4 | EDUC 4965 | 12 |
| Biological science elective | 3 | | |
| EDUC 4540 | 3 | | |
| Fine art elective | 3 | | |
| Advanced Methods | 3 | | |
| | 15-16 | | 12 |

The program has 129-131 credit hours; 128 credits are required for graduation.

BACHELOR OF SCIENCE (FOR DIRECT ADMIT PHYSICAL THERAPY STUDENTS, PHYSIOLOGICAL SCIENCES 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 Klingler College of Arts and Sciences after four years of study.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------|-----------|------------------|-----------|
| BIOL 1001 | 3 | BIOL 1002 | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| PSYC 1001 | 3 | THEO 1001 | 3 |
| | 16-17 | | 16-17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------|-----------|-------------------------|-----------|
| BIOL 2301 | 3 | BIOL 2201 | 3 |
| CHEM 2111 or 2113 | 4 | CHEM 2112 or 2114 | 4 |
| HIST 1001 or 1002 | 3 | PHIL 1001 | 3 |
| MATH 1410 or 1450 | 3 | Literature | 3 |
| Literature | 3 | Theology (second level) | 3 |
| | 16 | | 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-----------|---|-----------|
| BIOL 3702 | 4 | BIOL 3501 | 3 |
| BIOL 3701 | 3 | BIOL 3502 | 3 |
| PHYS 1001 or 1003 | 4 | MATH 1700 or 4740 | 3 |
| PHIL 2310 | 3 | PHYS 1002 or 1004 | 4 |
| Theology (third level)* | 3 | History/Social Science (must be Diverse Cultures course) | 3 |
| | | PHTH 1001 | 1 |
| | 17 | | 17 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|-------------|-----------|
| BISC 4130 | 5 | BISC 3150 | 3 |
| PHTH 7503 | 3 | BISC 4120 | 3 |
| PHTH 7512 (Fulfills Diverse Cultures requirement) | 3 | PHTH 7515 | 3 |
| PHTH 7513 | 3 | PHTH 7525 | 3 |
| PHIL 4335** | 3 | PHTH 7528 | 3 |
| | | PHTH 7530 | 2 |
| | 17 | | 17 |

For information on the physical therapy program, please see the College of Health Sciences section in this bulletin. Students admitted directly to the doctoral PT program who are interested in the Physiological Sciences major should contact the Department of Biological Sciences as soon as possible, and then consult with an adviser in the Department of Physical Therapy.

* THEO 4450 Medical Ethics can be taken as a substitute for PHIL 4335.

** If PHIL 4335 cannot be scheduled due to conflicts with other required courses, students may take any upper division PHIL course (3000 or higher), but unless they have taken THEO 4450, they will be required to take a one credit medical ethics course (PHIL 4336).

BACHELOR OF SCIENCE (FOR CHEMISTRY MAJORS)

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|------------------------|-----------|
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| MATH 1450 | 4 | MATH 1451 | 4 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| | | THEO 1001 | 3 |
| | 14-15 | | 17-18 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------------|-----------|---|-----------|
| CHEM 2113 | 4 | CHEM 2114 | 4 |
| PHYS 1013 (or PHYS 1003) | 4 | CHEM 2210 | 4 |
| MATH 2450 | 4 | PHYS 1014 (or PHYS 1004) | 4 |
| Literature | 3 | Literature | 3 |
| HIST 1001 or 1002 | 3 | History/Social-Behavioral Science | 3 |
| | 18 | | 18 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|---------------------------------|-----------|
| CHEM 3210 | 4 | CHEM 4434 | 3 |
| CHEM 4433 | 3 | Chemistry elective* | 3 |
| PHIL 1001 | 3 | Social-Behavioral Science | 3 |
| Theology (second level) | 3 | Theology (third level) | 3 |
| Elective | 3 | PHIL 2310 | 3 |
| | 16 | | 15 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-----------|---------------------------------|-----------|
| CHEM 4330 | 3 | CHEM 3420** | 2 |
| CHEM 3320 | 2 | Chemistry elective* | 3 |
| Philosophy (upper division) | 3 | Diverse Cultures elective | 3 |
| Electives | 6 | Electives | 9 |
| | 14 | | 17 |

* CHEM 4530 (offered alternate years) is required for the American Chemical Society certified degree.

** CHEM 3420 may be taken the junior year, concurrently with CHEM 4434.

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 1001 | 3 | ENGL 1002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| HIST 1001 or 1002 | 3 | History or Social-Behavioral Science | 3 |
| MATH 1450 | 4 | MATH 1451 | 4 |
| Social-Behavioral Science | 3 | Elective | 3 |
| <hr/> | | <hr/> | |
| 16-17 | | 16-17 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|-----------------------|-----------|
| MATH 2450 | 4 | MATH 3100 | 3 |
| MATH 2350 | 3 | Literature | 3 |
| Literature | 3 | Natural Science | 4 |
| Natural Science | 4 | PHIL 1001 | 3 |
| Elective | 3 | Elective | 3 |
| <hr/> | | <hr/> | |
| 17 | | 16 | |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------------|-----------|---------------------------------|-----------|
| MATH Sequence (part 1) | 3 | MATH Sequence (part 2) | 3 |
| MATH Group 1 (Pure) | 3 | MATH Group 3 (Statistics) | 3 |
| COSC 1010 | 4 | PHIL 2310 | 3 |
| THEO 1001 | 3 | Electives | 6-9 |
| Electives | 3 | | |
| <hr/> | | <hr/> | |
| 16 | | 15-18 | |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-----------|---------------------------------|-----------|
| MATH Group 2 (Applied) | 3 | MATH elective | 3 |
| MATH elective | 3 | Theology (third level) | 3 |
| Philosophy (upper division) | 3 | Diverse Cultures elective | 3 |
| Theology (second level) | 3 | Electives | 6-9 |
| 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 2450 and 2100 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 1450 and/or 1451 or placement in MATH 1451 or 2450 before registering for a calculus course.

BACHELOR OF SCIENCE (FOR COMPUTATIONAL MATHEMATICS MAJORS)

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-----------|---|-----------|
| COSC 1010 | 4 | COSC 1020 | 4 |
| MATH 1450 | 4 | MATH 1451 | 4 |
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| HIST 1001 or 1002 | 3 | History/Social-Behavioral Science | 3 |
| | 17-18 | | 17-18 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|-----------------|-----------|
| COSC 2200 | 3 | COSC 2100 | 3 |
| MATH 2450 ^{2,3} | 4 | MATH 3100 | 3 |
| MATH 2350 ^{2,3} | 3 | PHIL 1001 | 3 |
| Social-Behavioral Science | 3 | Electives | 6 |
| Elective | 3 | | |
| | 16 | | 15 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|-------------------------------|-----------|
| COSC 3410 (or elective) | 3 | COSC 3250 (or elective) | 3 |
| Mathematics elective | 3 | Mathematics elective | 3 |
| Literature | 3 | Literature | 3 |
| Natural Science | 4 | Natural Science | 4 |
| THEO 1001 | 3 | PHIL 2310 | 3 |
| | 16 | | 16 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-----------|---------------------------------|-----------|
| MATH 4540 | 3 | MATH 4710 or 4720 | 3 |
| MATH 4630 | 3 | Theology (third level) | 3 |
| Philosophy (upper division) | 3 | Diverse Cultures elective | 3 |
| Theology (second level) | 3 | Electives | 6-9 |
| Electives | 3-6 | | |
| | 15-18 | | 15-18 |

Notes:

1. Taking the minimum number of hours each term will not accumulate sufficient hours for graduation in four years.
2. MATH 2350 and 2450 can be taken in either order or concurrently.
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 1450 and/or 1451 or placement in MATH 1451 or 2450 before registering for a calculus course.

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

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------|-------------|-----------------------------------|-------------|
| COSC 1010 | 4 | COSC 1020 | 4 |
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| HIST 1001 or 1002 | 3 | History/Social-Behavioral Science | 3 |
| MATH 1400 ^{2,3} | 3 | MATH 2100 | 3 |
| | <hr/> 16-17 | | <hr/> 16-17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-----------|-------------|-----------|
| COSC 2200 | 3 | COSC 3250 | 3 |
| COSC 2100 | 3 | COSC 3100 | 3 |
| Social-Behavioral Science | 3 | PHIL 1001 | 3 |
| THEO 1001 | 3 | Literature | 3 |
| Elective | 3 | Elective | 3 |
| | <hr/> 15 | | <hr/> 15 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-----------|----------------------------|-----------|
| COSC 3410 | 3 | Computer Science electives | 6 |
| Computer Science elective | 3 | PHIL 2310 | 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. |
|-----------------------------|-------------|---------------------------|-------------|
| COSC 4997 | 3 | COSC 4998 | 3 |
| Computer Science elective | 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 1400.
3. MATH 1450, which is a required course in the MATH major and MATH minor, fulfills the MATH 1400 requirement.

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 3953, 3995, 4931, 4953, 4995, 4999.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------|-----------|------------------|-----------|
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| MATH 1450 | 4 | MATH 1451 | 4 |
| PHYS 1013 | 4 | PHYS 1014 | 4 |
| | | PHYS 1018 | 0 |
| 14-15 | | 14-15 | |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------|-----------|-------------|-----------|
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| Elective | 3 | Literature | 3 |
| HIST 1001 or 1002 | 3 | Elective | 3 |
| MATH 2450 | 4 | MATH 2451 | 4 |
| PHYS 2004 | 3 | PHYS 2005 | 3 |
| 17 | | 17 | |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------|-----------|---------------------------|-----------|
| Elective | 3 | Diverse Cultures elective | 3 |
| PHIL 1001 | 3 | PHIL 2310 | 3 |
| PHYS 3011 | 3 | Social-Behavioral Science | 3 |
| PHYS 4031 | 3 | Physics electives | 8 |
| PHYS 2055 | 2 | | |
| THEO 1001 | 3 | | |
| 17 | | 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 | | |
| 15 | | 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 3953, 3995, 4931, 4953, 4995, 4999.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------------|-----------|----------------------------|-----------|
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| Foreign Language | 3-4 | Foreign Language | 3-4 |
| MATH 1450 | 4 | MATH 1451 | 4 |
| PHYS 1013 | 4 | PHYS 1014 | 4 |
| | | PHYS 1018 | 0 |
| | 14-15 | | 14-15 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|----------------------------------|-----------|
| COSC 1010 | 4 | COSC 1020 | 4 |
| HIST 1001 or 1002 | 3 | History/Social Science | 3 |
| MATH 2450 | 4 | Elective | 3 |
| PHYS 2004 | 3 | MATH 2451 | 4 |
| Elective | 3 | PHYS 2005 | 3 |
| | 17 | | 17 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------|-----------|-------------------------------------|-----------|
| COSC 2200 | 3 | COSC 2100 | 3 |
| PHIL 1001 | 3 | PHIL 2310 | 3 |
| MATH 3100 | 3 | Literature | 3 |
| PHYS 3011 | 3 | PHYS 3056 | 2 |
| PHYS 2055 | 2 | Physics elective | 3 |
| THEO 1001 | 3 | Social-Behavioral Science | 3 |
| | 17 | | 17 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------------|-----------|-------------------------------------|-----------|
| MATH 4540 | 3 | Computer Science elective | 3 |
| Philosophy (upper division) | 3 | Literature | 3 |
| PHYS 4031 | 3 | PHYS 4049 | 3 |
| Theology (second level) | 3 | Physics elective | 2 |
| Computer Science electives | 6 | Theology (third level) | 3 |
| | 18 | Diverse Cultures elective | 3 |
| | | | 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 3953, 3995, 4931, 4953, 4995, 4999.

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|-----------------|-----------|
| BIOL 1001 | 3 | BIOL 2001 | 3 |
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| MATH 1450 | 4 | MATH 1451 | 4 |
| PHYS 1013 | 4 | PHYS 1014 | 4 |
| | | PHYS 1018 | 0 |
| | 14 | | 14 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|------------------------|-----------|
| CHEM 1001 | 4 | BIOL 1002 | 3 |
| Foreign Language | 3-4 | CHEM 1002 | 4 |
| MATH 2450 | 4 | Foreign Language | 3-4 |
| PHYS 2004 | 3 | MATH 2451 | 4 |
| Social-Behavioral Science | 3 | PHYS 2005 | 3 |
| | 17-18 | | 17-18 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-----------|------------------------|-----------|
| CHEM 2113 | 4 | BIOL 4101* | 3 |
| HIST 1001 or 1002 | 3 | CHEM 2114 | 4 |
| Literature | 3 | Physics elective | 3 |
| PHIL 1001 | 3 | PHIL 2310 | 3 |
| PHYS 3011 | 3 | THEO 1001 | 3 |
| | 16 | | 16 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-----------|---|-----------|
| Elective | 3 | Literature | 3 |
| Philosophy (upper division) | 3 | History/Social-Behavioral Science | 3 |
| PHYS 4031 | 3 | Physics elective | 2-3 |
| PHYS 2055 | 2 | Theology (third level) | 3 |
| Physics elective | 3 | Electives | 3 |
| Theology (second level) | 3 | Diverse Cultures elective | 3 |
| | 17 | | 17-18 |

* Required by some medical and dental schools.

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

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|----------------|------------------------------|-------------|
| BIOL 1001 | 3 | BIOL 1002 | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| Foreign Language or elective ¹ | 3 or 4 | Foreign Language or elective | 3 or 4 |
| HIST 1001 or 1002 | 3 | MATH 1410/1450 | 3 or 4 |
| ARSC 1953 (Introduction to Human Care) | 1 | BISC 1030 (Optional) | 1 |
| | <hr/> 17 OR 18 | | <hr/> 17-19 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------|-----------|-----------------------|-----------|
| BIOL 2001 | 3 | BIOL 2201 | 3 |
| BIOL 2301 | 3 | CHEM 2112 | 4 |
| CHEM 2111 | 4 | Social Science (UCCS) | 3 |
| Literature (UCCS) | 3 | MATH 1700 | 3 |
| PHIL 1001 | 3 | THEO 1001 | 3 |
| | <hr/> 16 | | <hr/> 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|---|-----------|
| BIOL (upper div. lab)/Diverse Cultures ² | 3 | BIOL 4101 | 3 |
| Literature | 3 | BIOL (upper div. lab)/Diverse Cultures ² | 3 |
| PHYS 1001 | 4 | PHYS 1002 | 4 |
| PHIL 2310 | 3 | PHIL (upper division) | 3 |
| Theology (second level) (UCCS) | 3 | Theology (third level) | 3 |
| | <hr/> 16 | | <hr/> 16 |

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

Notes:

1. If placed in SPAN 1003, then only one (1) semester is required, otherwise levels 1001 and 1002 are required. No language is required if exempt or waived.
2. Students must complete HIST 1301, 1401 or a Diverse Cultures social science course and one upper division BIOL lab.

Year One—Dental Curriculum*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------|-----------|-------------|-----------|
| DEIN 7110 | 3 | DEIN 7121 | 3 |
| DEIN 7114 | 2 | DEIN 7124 | 2 |
| DEGD 7112 | 3 | DEIN 7121 | 4 |
| DEGD 7113 | 3 | DEGD 7122 | 3 |
| DEIN 7118 | 1 | DEGD 7123 | 3 |
| BISC 7513 | 4 | DEIN 7128 | 1 |
| BISC 7514 | 4 | BISC 7410 | 4 |
| | | BISC 7515 | 3 |
| | | BISC 7516 | 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 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 MAJORS)

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|------------------------------------|-----------|
| BIOL 1001 | 3 | BIOL 1002 | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| ENGL 1001 | 3 | ENGL 1002 | 3 |
| Foreign Language or elective ¹ | 3-4 | Foreign Language or elective | 3-4 |
| PSYC 1001 | 3 | HIST 1001 or 1002 | 3 |
| ARSC 1953 (Introduction to Human Care) | 1 | BISC 1030 (Optional) | 1 |
| | 17-18 | | 16-18 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-----------|--------------------------------------|-----------|
| BIOL 2301 | 3 | BIOL 2201 or 4101 | 3 |
| CHEM 2111 | 4 | CHEM 2112 | 4 |
| THEO 1001 | 3 | MATH 4740 | 3 |
| Literature (UCCS) | 3 | Literature | 3 |
| PHIL 1001 | 3 | Theology (second level) (UCCS) | 3 |
| | 16 | | 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|--|-----------|
| BIOL 3701 | 4 | BIOL 3501 | 3 |
| BIOL 3702 or Diverse Cultures ² | 3 | BIOL 3502 or Diverse Cultures ² | 3 |
| MATH 1410 or 1450 | 3-4 | PHYS 1002 | 4 |
| PHYS 1001 | 4 | PHIL 4335 | 3 |
| PHIL 2310 | 3 | Theology (third level) | 3 |
| | 17-18 | | 16 |

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

Notes:

1. If placed in SPAN 1003, then only one (1) semester required, otherwise levels 1001 and 1002 are required. No language is required if exempt or waived.
2. Students must complete HIST 1301, 1401 or a Diverse Cultures social science course, *and* either BIOL 3502 or 3702.

Year One—Dental Curriculum*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|-----------------|-----------|
| DEIN 7110 | 3 | DEIN 7121 | 3 |
| DEIN 7114 | 2 | DEIN 7124 | 2 |
| DEGD 7112 | 3 | DEIN 7121 | 4 |
| DEGD 7113 | 3 | DEGD 7122 | 3 |
| DEIN 7118 | 1 | DEGD 7123 | 3 |
| BISC 7513 | 4 | DEIN 7128 | 1 |
| BISC 7514 | 4 | BISC 7410 | 4 |
| | 20 | BISC 7515 | 3 |
| | | BISC 7516 | 3 |
| | | | 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.

COURSE DESCRIPTIONS

BIOLOGICAL SCIENCES (BSCI)

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

MAJOR IN BIOLOGICAL SCIENCES:

REQUIRED COURSES: BIOL 1001, 1002, 2201, 2301.
 LAB COURSES: Any three from 2001, 3102, 3202, 3302, 3502, 3702, and 4995. Majors are encouraged to take upper division laboratories, although one lower division laboratory may be used to satisfy this requirement. ELECTIVE COURSES: any five courses of three or more credits from the following: (a) any of the laboratory courses not previously taken, including a second BIOL 4995 course or a BISC 4995 course; (b) BIOL 2401, 3401, 3406, 3501, 3601, 3701, 3801, 4101, 4703, 4806; (c) by consent of instructor, departmental chairperson and Graduate School, any graduate course; (d) a maximum of one course from the Department of Biomedical Sciences that is not offered by the Department of Biological Sciences. Cognate course requirements are: CHEM 1001 and 1002, 2111 and 2112 (or 2113 and 2114); PHYS 1001 and 1002 (or 1003 and 1004); and MATH 1410 or 1450 and one additional MATH or COSC course.

MINOR IN BIOLOGICAL SCIENCES:

Six courses, including BIOL 1001, 1002, 2001 and CHEM 1001, plus two electives from Biological Sciences or one Biological Sciences elective and ANTH 2201. Elective Biological Sciences' courses include: BIOL 2201, 2301, 2401, 3401, 3406, 3501, 3601, 3701, 3801, 4101, 4703 and 4806. BIOL 1009, 1406 and 4995 cannot be taken except with consent of department chairperson. To pursue Department of Public Instruction certification, College of Education students should follow the biological sciences minor by selecting the following courses: BIOL 1001, 1002, 2001, 2201, 2301, and one additional upper-division elective course in Biological Sciences for a total of six courses.

MAJOR IN BIOLOGY FOR THE PROFESSIONS

Open to undergraduate students in the College of Education as a second major for students who wish to teach high school. REQUIRED COURSES: BIOL 1001, 1002, 2001, 2201, 2301; 3406 or 3701 or 3801; one lab selected from 3102, 3202, 3302, 3502, 3702.

ELECTIVE COURSES: any three courses selected from the following: (a) any lab course from above selection not previously taken, including BIOL 4995; (b) BIOL 1406, 2401, 4101 (CHEM 2112 prerequisite taken concurrently), 3401, 3406, 3501, 3601, 3701, 3801, 4806; (c) with consent of instructor and department chairperson any Biological Sciences graduate course; (d) one Biomedical Sciences course not offered by Biological Sciences; (e) courses offered

by other departments with consent of department chairperson.

COGNATE COURSES: CHEM 1001, 1002, 2111 (or 2113); MATH 1700 or MSCS 4700 or 4740; PHYS 1001 or 1008 or 1009, or ARSC 1020. MATH 1410 or 1450 not required but highly recommended.

MAJOR IN PHYSIOLOGICAL SCIENCES :

Provides students interested in physiology and neurobiology a strong foundation in biological sciences, cell biology and biochemistry and further studies in neurobiology, human physiology and anatomy, muscle and exercise physiology.

Required courses: BIOL 1001, 1002, 2201, 2301, 3501, 3502, 3701, 3702; CHEM 1001, 1002, 2111 (or 2113) 2112 (or 2114) ; MATH 1410 (or 1450) and MATH 4740; PHIL 4335 (or THEO 4450); PHYS 1001 (or 1003), 1002 (or 1004); BISC 2125 (or 2135); PSYC 1001.

Elective courses: Any three of the following: BIOL 2001, 3202, 3401, 3406, 3601, 3801, 4101, 4302, 4703, 4806 or a BISC 4995.

Recommended course: BIOL 4101 for students intending to apply to medical, dental, graduate or pharmacy school. BISC 2136.

MAJOR IN PHYSIOLOGICAL SCIENCES, PHYSICAL THERAPY TRACK:

Open only to undergraduate students who have been admitted directly into the six year doctor of physical therapy degree program, are in good academic standing prior to the beginning of the professional phase of the program, and want to earn a bachelor of science degree from the Klingler College of Arts and Sciences after four years of study.

REQUIRED COURSES: BIOL 1001, 1002, 2201, 2301, 3501, 3502, 3701, 3702; BISC 3150, 4120, and 4130; PHTH 1001, 7503, 7512, 7515, 7525, 7528, 7530 and 7513.

COGNATE COURSES: (10 courses) CHEM 1001 and 1002, 2111 and 2112 (or 2113 and 2114); MATH 1410 or 1450; MATH 1700 or 4740; PHIL 4335; PHYS 1001 and 1002 (or 1003 and 1004); PSYC 1001.

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

▲BIOL 1001. 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. 3 hrs. lec., disc.

BIOL 1002. General Biology 2 3 sem. hrs. Glycolysis and cellular respiration. Photosynthesis. Mitosis and meiosis. Mendelian and molecular genetics. Microbial diversity. Plant form and function. 3 hrs. lec., disc. *Prereq:* BIOL 1001 and CHEM 1001; or cons. of instr.

BIOL 1003. Biology Matters 1 sem. hr. A seminar to introduce students early in their academic careers to modern biological and biomedical research. Students learn about various career paths biological science graduates can take. Medical school, dental school, and graduate school will be discussed, along with the possibility of combining biology with disciplines such as law, finance and

computer science. Primarily for freshmen and sophomores. Twelve weeks. S/U grade assessment.

▲BIOL 1009. Biology for Non-Science Majors 3 sem. hrs.

Designed for non-science students, the course introduces biological concepts and will focus on how scientific knowledge is created. Special emphasis on cell function, evolutionary biology, genetics, and modern genetic methods. Topics covered will include inheritance of genetic traits, cloning, and biotechnology, nervous system evolution, speciation, and extinction. 3 hrs. lec., disc. May be counted toward the Natural Science requirement of the College Curriculum.

▲BIOL 1406. Plants, Pathogens and People 3 sem. hrs.

Plant diseases and their effects on food supplies and human history. Biology of plants and the pathogens that cause plant diseases. Controversies related to pesticide use, biological control, genetic engineering, biodiversity. Covers the major biology concepts. Hands-on activities and class discussions. Designed for nonscience students and elementary teacher preparation. Does not fulfill biological sciences major requirements.

BIOL 2001. Principles of Biological Investigation 3 sem. hrs.

Introduction to selected instrumentation and techniques, including light microscopy, staining, aseptic procedures, spectrophotometry, gel electrophoresis, and immunoassays. Topics may include: photosynthesis, protein quantification, bacteria, fungi, nematodes, histology, evolution, embryo development, and physiology of the nervous system. Recommended for freshman and sophomores who have completed BIOL 1002 but may be taken concurrently. 1 hr. lec., 3 hrs. lab. *Prereq:* BIOL 1001.

BIOL 2201. Genetics 3 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. 3 hrs. lec. *Prereq:* BIOL 1001 and BIOL 1002.

BIOL 2301. Cell Biology 3 sem. hrs.

The cell is the basic unit of life; it is the fundamental unit from which all organisms are built. The concepts as well as the scientific evidence that underlie our current understanding of cellular organization and function are emphasized. Key cellular processes including membrane function, signaling, transcriptional regulation, protein targeting, vesicular trafficking, cytoskeleton, cell cycle regulation, and cell death are discussed. An attempt is made to relate these processes to our understanding of human disease. 3 hrs. lec., disc. *Prereq:* BIOL 1001 and 1002.

BIOL 2401. Ecology 3 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. 3 hrs. lec., disc. *Prereq:* BIOL 1002; or cons. of instr.

BIOL 3102. 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

▲ Indicates UCCS courses

used in research laboratories. 1 hr. lec., 4 hrs. lab.
Prereq: BIOL 4101 and cons. of dept. ch. BIOL 4101 may be taken concurrently with cons. of instr.

BIOL 3202. Experimental Genetics 3 sem. hrs.
Genetic organization, function, engineering, and inheritance in prokaryotic and eucaryotic organisms. 1 hr. lec., 4 hrs. lab. *Prereq: BIOL 2201, which may be taken concurrently, and cons. of dept. ch.*

BIOL 3302. Experimental Cell Biology
3 sem. hrs.

Molecular and biochemical studies of cellular structure and organization in relation to integrated cellular function. 1 hr. lec., 4 hrs. lab.
Prereq: BIOL 2301, which may be taken concurrently, and cons. of dept. ch.

BIOL 3401. 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 2401 and 3401 will attend the same lectures but will meet in separate discussion sections; furthermore, students in BIOL 3401 will be expected to complete assignments and exam material beyond those required for students enrolled in BIOL 2401. May not be taken for credit by students who have completed BIOL 2401. 3 hrs. lec.
Prereq: BIOL 1002; or cons. of instr.

BIOL 3406. Plant Biology 3 sem. hrs.
Despite their tremendous diversity in form, seed plants share many similarities in their cellular organization, metabolism, and core development paradigms. Primary course objectives include student familiarity with organization, growth and development of vascular plants; application of genetic engineering to plants; and concepts of plant evolution and reproduction from algae to flowering plants. 3 hrs. lec. *Prereq: BIOL 1002 or cons. of instr.*

BIOL 3501. Neurobiology 3 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. 3 hrs. lec., disc.
Prereq: BIOL 1002; or cons. of instr.

BIOL 3502. 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 are investigated. 1 hr. lec., 4 hrs. lab. *Prereq: BIOL 3501, which may be taken concurrently, and cons. of dept. ch.; or BIOL 3701 and cons. of dept. ch.*

BIOL 3601. Animal Development 3 sem. hrs.
The study of the ordered formation of complex, multi-cellular organisms from a single cell. A multi-disciplinary exploration of the integrative processes underlying animal development, incorporating techniques of cellular and molecular biology for the study of development. 3 hrs. lec., disc.
Prereq: BIOL 2301 or cons. of instr.

BIOL 3701. 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. 4 hrs. lec., disc.
Prereq: BIOL 1001; Jr. or Sr. stndg; or cons. of instr.

BIOL 3702. 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. 1 hr. lec., 4 hrs. lab. *Prereq: BIOL 3701, which may be taken concurrently, and cons. of dept. ch.*

BIOL 3801. 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 microorganisms on man and on the earth. 3 hrs. lec., disc. *Prereq: BIOL 4101.*

BIOL 4101. 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. 3 hrs. lec., disc.
Prereq: CHEM 2112, which may be taken concurrently, and BIOL 1002; or cons. of instr.

BIOL 4201. Genomics and Bioinformatics
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. *Prereq: BIOL 2201 or cons. of instr.*

BIOL 4703. 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.
Prereq: BIOL 3701 or equiv., or cons. of instr.

BIOL 4806. 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. 3 hrs. lec., disc.

BIOL 4931. Topics in Biology 1 sem. hr.
Analysis of selected topics under faculty supervision. S/U grade assessment. *Prereq: Cons. of instr. and cons. of dept. ch. Does not count toward requirements for biological sciences major.*

BIOL 4995. Independent Study in Biology
1-3 sem. hrs.
Experimental analysis of a selected topic under faculty supervision. *Prereq: Sr. stndg., cons. of instr., and cons. of dept. ch.*

MAJOR IN BIOCHEMISTRY AND MOLECULAR BIOLOGY

Required courses:
BIOL 1001, 1002, 2201, 2301, 3102, 4101—18 sem. hrs.
CHEM 1001, 1002, 2210, 2113 (or 2111), 2114 (or 2112), 4431 (or 4433 and 4434)—23 sem. hrs.
Biological sciences laboratory course (upper division) or BIOL or CHEM 4995—3 sem. hrs.
MATH 1450, 1451—8 sem. hrs.
PHYS 1001, 1002 (or 1003, 1004)—8 sem. hrs.
Elective courses. Any three of the following:
BIOL 3202, 3302, 3401, 3406, 3501, 3502, 3601, 3701, 3702, 3801, 4703, 4806, or second 4995 or BISC 4995;
CHEM 3210, 4130, 4330, 4430; 4530
MATH 2450, 2451, 4740

Students who take CHEM 4433, 4434, and MATH 2450 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: Ryan
Professor: Cremer (*Emeritus*), Donaldson, Haworth (*Emeritus*), Hoffman (*Emeritus*), Hossenlopp, Kincaid, McKinney (*Emeritus*), Nakamoto (*Emeritus*), Reid, Schrader (Research), Steinmetz, Tran, Wilkie
Associate Professor: Rathore, Yi
Assistant Professor: Babikov, Gardinier, Sem
Laboratory Supervisor: Ausman, Cai, Lindeman, Lukaszewski-Rose

MAJOR IN CHEMISTRY:

Forty-three hours, including CHEM 1001, 1002, 2113, 2114, 2210, 3210, 3320, 3420, 4330, 4433, 4434 and six hours of electives. PHYS 1013 (or 1003) and 1014 (or 1004); MATH 1450, 1451 and 2450 are also required for the major. (Students who select a chemistry major following their sophomore year may substitute CHEM 2111, 2112, for 2113, 2114, 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 IN CHEMISTRY:

Five courses in chemistry (not including CHEM 4995). PHYS 4012 or 4062 may be counted for the minor.

To pursue Department of Public Instruction certification, College of Education students should follow the chemistry minor by selecting the following courses. Twenty-two hours, including CHEM 1001, 1002, 2210, and 2111 (or 2113), or 2112 (or 2114), plus two hours of chemistry electives.

MAJOR IN CHEMISTRY FOR THE PROFESSIONS

Track for students who wish to teach high school. Corequisite is a first major in EDUC. Thirty-four hours including CHEM 1001, 1002, 2113, 2114, 2210, 3210, 4433, and 4434; four hours of chemistry electives. Note that PHYS 1013 (or 1001 or 1003), PHYS 1014 (or 1002 or 1004) and MATH 2450 are prerequisites for CHEM 4433 and 4434.

▲CHEM 1001. 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 1001 and CHEM 1002: Scientific notation, logarithms, the quadratic equation and proportionality. Offered every term. 3 hrs. lec., 3 hrs. lab., 1 hr. disc.

▲CHEM 1002. General Chemistry 2 4 sem. hrs. Continuation of CHEM 1001. Chemistry of metals and nonmetals, kinetics, chemical equilibrium, aqueous equilibria, free energy relationships, electrochemistry, nuclear chemistry, organic chemistry, and chemistry of the transition metals. Qualitative analysis included as part of the laboratory work. Offered every term. 3 hrs. lec., 3 hrs. lab., 1 hr. disc. *Prereq: CHEM 1001.*

CHEM 1014. General Chemistry for Chemistry Majors 4 sem. hrs. Continuation of CHEM 1001. Intended for chemistry majors. Emphasis in the lecture will be on kinetics, equilibrium, electrochemistry, nuclear chemistry, symmetry in coordination and organic chemistry, and industrial processes as applied from thermodynamic principles. The laboratory will consist of experiments designed to correlate with lecture; introduction of some research type instrumentation will be given. 3 hrs. lec., 3 hrs. lab. *Prereq: CHEM 1001.*

CHEM 1020. Chemistry 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 1030. Chemistry 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 2111. 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 1002 or CHEM 1014.*

CHEM 2112. Organic Chemistry 2 4 sem. hrs. Continuation of CHEM 2111. Extension of the chemistry of the remaining mono and polyfunctional, and aromatic compounds. Bonding, stereochemistry, mechanisms, synthesis, applied spectroscopy, heterocycles and natural products. Laboratory: synthesis, instrumental application, organic qualitative analysis. Offered each spring. 3 hrs. lec., 4 hrs. lab. *Prereq: CHEM 2111 or CHEM 2113.*

CHEM 2113. 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 1002*

or CHEM 1014. Does not carry graduate credit for Chemistry graduate students.

CHEM 2114. Organic Chemistry for Majors 2 4 sem. hrs. Continuation of CHEM 2113. Mechanisms, structure-reactivity relationships, and complex syntheses applied to the remaining principle classes of organic compounds. Laboratory: organic qualitative analysis. Offered spring term. 3 hrs. lec., 1 lab-recit., 4 hrs. lab. *Prereq: CHEM 2111 or CHEM 2113.*

CHEM 2210. 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 1002 or CHEM 1014.*

CHEM 3120. Chemistry 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 3130. 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 3210. Instrumental Analysis 4 sem. hrs. Continuation of CHEM 2210. Physical methods of analysis with emphasis on electrochemical, spectral and chromatographic methods. Offered annually. 3 hrs. lec., 4 hrs. lab. *Prereq: CHEM 2210 and CHEM 4433, which must be taken concurrently, and PHYS 1004; or CHEM 2210 and CHEM 4433, which must be taken concurrently, and PHYS 1002.*

CHEM 3320. 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 4330, which must be taken concurrently, and CHEM 4434.*

CHEM 3420. Physical Chemistry Laboratory 2 sem. hrs. Laboratory experiments illustrating the principles of physical chemistry. Offered spring term. 5 hrs. lab. *Prereq: CHEM 4433 and CHEM 4434, which must be taken concurrently.*

CHEM 3931. Topics in Chemistry 1-3 sem. hrs. Topics of current interest in inorganic, organic, analytical, physical or biochemistry. *Prereq: CHEM 4434, which may be taken concurrently, or cons. of instr.*

CHEM 4130. Characterization of Organic Compounds 3 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. 2 hrs. lec., 4 hrs. lab. *Prereq: CHEM 4434.*

CHEM 4330. 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 4434.*

CHEM 4430. Introduction to Quantum Chemistry 3 sem. hrs. Elementary quantum theory and applications to atoms, molecules, and chemical bonding. *Prereq: CHEM 4434.*

CHEM 4431. Physical Chemistry: Fundamentals with Applications in Biological Sciences 3 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 1002 or CHEM 1014; and MATH 1410 or MATH 1450; and PHYS 1002 or PHYS 1004. Does not carry graduate credit for chemistry graduate students.*

CHEM 4433. 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 2210, CHEM 2114, MATH 2450, and PHYS 1002; or CHEM 2210, CHEM 2114, MATH 2450, and PHYS 1004.*

CHEM 4434. Physical Chemistry 2 3 sem. hrs. Continuation of CHEM 4433. Offered spring term. 3 hrs. lec. *Prereq: CHEM 4433.*

CHEM 4530. Introduction to Biochemistry 3 sem. hrs. Bioenergetics, glycolysis, oxidative degradation, enzymes, metabolic controls, metabolism of carbohydrates, lipids and amino acids. *Prereq: CHEM 2112 and CHEM 4431; or CHEM 2112 and CHEM 4433.*

CHEM 4630. Introduction to Polymer Science 3 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. *Prereq: CHEM 2112 and CHEM 4434.*

CHEM 4932. Advanced Topics in Chemistry 1-3 sem. hrs. Advanced topics of current interest in inorganic, organic, analytical, physical or biochemistry. *Prereq: CHEM 4434.*

CHEM 4953. Undergraduate Seminar 1-3 sem. hrs. Emphasis on critical reading, analysis, and oral reporting of current literature sources in Chemistry. *Prereq: CHEM 4434.*

CHEM 4995. Independent Study in Chemistry 1-3 sem. hrs. Analysis of a specific topic under faculty supervision. Offered every term. *Prereq: CHEM 4434 and cons. of dept. ch.*

CHEM 4999. Senior Thesis 2-4 sem. hrs. Laboratory work leading to a thesis under the direction of an adviser. Offered every term. *Prereq: CHEM 4434 and cons. of dept. ch.*

ECONOMICS (ECON)

Chairperson and Professor: D. Clark
Professor: Brush, Chowdhury, Daniels, Danner (Emeritus), Davis, Nourzad, Smiley (Emeritus)
Associate Professor: Breeden, S. Crane, McGibany (Executive Associate Dean), Toumanoff, Trestrail (Emeritus)

Assistant Professor: Wang, Yakusheva
Adjunct Assistant Professor: Kohls, Lephardt

MAJOR IN ECONOMICS:

Twenty-seven hours, including ECON 2003, 2004, 3003, 3004, and fifteen additional hours of upper division work. In addition, courses in basic statistics (MATH 1700 or equivalent) and mathematics (MATH 1390 and 1400, or MATH 1450 and 1451, or equivalent) are required. Students contemplating graduate study in economics should take MATH 1450 and 1451.

MINOR IN ECONOMICS:

Eighteen hours, including ECON 2003 and 2004 and twelve hours of upper division course work. In addition, a course in basic statistics (MATH 1700 or equivalent) is required. Students minoring in economics are urged to satisfy the mathematics-logic-computer requirement of the Klingler College of Arts and Sciences by taking MATH 1390 and 1400 or MATH 1450 and 1451.

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 1001. 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 2003. 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 2004. 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 2003.

ECON 3001. 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 3001 and ECON 3003 for credit. *Prereq:* ECON 2003 and ECON 2004 and MANA 2028 or equiv.

ECON 3003. Intermediate 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 2003, ECON 2004, and MATH 1400 or equiv. *Students may not take both ECON 3001 and ECON 3003 for credit.*

ECON 3004. Intermediate Macroeconomic Analysis 3 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 2003 and ECON 2004 and MATH 1400 or equiv.

ECON 3986. Internship Work Period 0 sem. hrs. SNC/UNC grade assessment. *Prereq:* Jr. standing, cons. of prog. dir. and cons. of internship dir.

ECON 4006. Public Policies Toward American Industry 3 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 2003 and ECON 2004.

ECON 4008. 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 2003 and ECON 2004

ECON 4010. 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 2003 and ECON 2004.

ECON 4012. 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 2003 and ECON 2004.

ECON 4016. 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 2003 and ECON 2004.

ECON 4020. 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 2003 and ECON 2004.

ECON 4040. 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 2003 and ECON 2004. *Credit not given if ECON 4044 or ECON 4046 has already been completed for credit.*

ECON 4042. International Antitrust and Competition Policy 3 sem. hrs.

Examines the economics of Antitrust or Competition Policy in an international context. Through readings, lectures, and class discussions it explores the economic rationale for Antitrust Policy, and examines the major topical areas that receive policy attention. Coverage includes a comparative survey of the policy approaches pursued by several major countries/economies, along with discussion of the conflicts and coordination issues that arise in a world characterized by extensive global trade.

Prereq: ECON 2003 and ECON 2004.

ECON 4044. International Currency Markets 3 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 2003 and ECON 2004.

ECON 4045. 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 2003 and ECON 2004.*

ECON 4046. 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 2003 and ECON 2004.*

ECON 4048. The Russian Economy 3 sem. hrs. Examines the development of the Russian economy, from the origin of the Muscovite state in 1462 to the present post communist state. Common elements as well as idiosyncratic peculiarities of each period are studied. Particular attention is paid to the Soviet Communist era, including examination of Lenin's New Economic Policy, Stalin's collectivization and creation of a planned economy, the Soviet experience in World War II, the gradual stagnation and decline of Soviet economic power beginning in 1965, and the end-game of Soviet communism engineered by Gorbachev from 1985 to 1991. The course concludes with a careful examination of the post communist transition and prospects for the future of Russia's economy. *Prereq: ECON 2003 and ECON 2004*

ECON 4060. Introduction to Econometrics 3 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 2003 and ECON 2004 and MATH 1700 or equiv.; or ECON 2003 and ECON 2004 and MANA 2028 or equiv.*

ECON 4065. Introduction to Mathematical Economics 3 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 2003 and ECON 2004 and MATH 1390 or equiv.; and MATH 1400 or equiv.*

ECON 4070. 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 2003 and ECON 2004 and PHIL 2310.*

ECON 4075. The Economics of Religion 3 sem. hrs.

Explores how the tools of modern economic analysis, theoretical and empirical, can be used to better understand issues central to religious behavior and participation. Hence, the primary objective is to gain a better understanding of the breadth and application of economic concepts (the student learned in principles and intermediate courses) using the markets for religion as a vehicle for analysis. The secondary objective is to better understand the functioning of the religious markets: Why do individuals allocate time and money to religious activities? How do they determine the allocation between the two? Why are there so many denominations in the United States? Why are some churches very large and others very small? Why do predominately Protestant nations grow faster than predominately Catholic nations? How does religious participation affect individual attitudes toward trust, trade and immigration? *Prereq: ECON 2003 and ECON 2004*

ECON 4080. Money, Banking, and Monetary Policy 3 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 2003 and ECON 2004.*

ECON 4931. Topics in Economics 3 sem. hrs. *Prereq: Jr. stndg and ECON 2003 and ECON 2004.*

ECON 4953. Seminar in Economics 3 sem. hrs. *Prereq: Jr. stndg. and ECON 2003 and ECON 2004.*

ECON 4986. Economics Internship - Grading Period 3 sem. hrs.

S/U grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

ECON 4995. Independent Study in Economics 1-4 sem. hrs.

Prereq: Cons. of dept. ch.

ECON 4996. Senior Experience in Economics 3 sem. hrs.

The Senior Experience requirement applies to all students who are seeking a B.A. degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq: Sr. stndg, enrolled in the Klingler College of Arts and Sciences*

ECON 4999. 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: Ratcliffe
Professor: Bates, Block, DeFalco (*Emeritus*), M. Gillespie, Hoeveler, Hribal, Jeffers, Machan, McCandles (*Emeritus*), Rivero
Associate Professor: Asp (*Emerita*), Bodden, Boly, Chappell, Curran, Duffy, P. Gillespie, Hathaway, Krueger, Sorby, Spargo, Su, Zurcher
Assistant Professor: Adams-Roberts, Blair, Karian, Keiser, Melamed, Nowacek, Wadsworth
Visiting Professor: Watson
Visiting Associate Professor: Bieganowski
Visiting Assistant Professor: Chavez, Nunnery, Roeschlein, Stark,
Lecturer: Ankerberg, Ciemniowski, Dickerson, Edwards-Prodoehl, Foran, Glore, Heman, Joshua, Keaton, Khalastchi, Kiely, McBride, Nado, Prochaska, Reid, Schuster, Sjostrom, Stella, Stratton, Tallon, Urbanski, Turner, Willacker, Zongolowicz-Lahmann

NOTE: Students pursuing teaching certification by the Wisconsin Department of Public Instruction for an Elementary Education major must follow the Literature major requirements. Students pursuing teaching certification by the Wisconsin Department of Public Instruction for a Secondary Education major must follow the Writing-Intensive English major requirements.

NOTE: All literature courses must be taken from English department offerings. Foreign language literature courses do not fulfill requirements for these majors and minors.

MAJOR IN LITERATURE :

Thirty hours (excluding ENGL 1001 and 1002 or equivalents), 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 (2410, 2420, 2510, 2520).

Group II, Language Study (3 hrs.): 4110, 4120, 4130, or 4170.

Group III, Individual Authors (3 hrs.): 4610, 4620 or 4640.

Group IV, English or American Literature before 1800 (3 hrs.): 4410, 4420, 4430, 4440, 4450, 4510, 4620, 4640; or 4610, 4710, 4800, 4820, 4870, 4931 when the course deals with pre-1800 English or American literature.

Group V, Shakespeare (3 hrs.): 4630.

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 IN LITERATURE :

Eighteen hours (excluding ENGL 1001 and 1002 or equivalents), divided according to the following groups:

Group I, Surveys or Introductions (6 hrs.): any two lower division literature surveys.

Group II, Shakespeare (3 hrs.): 4630.

Group III, Electives (9 hrs.): any three upper-division literature courses, no more than one of which may be a "writing" course.

See Director of Undergraduate Studies for a requirements checklist.

To pursue Department of Public Instruction certification, College of Education students should follow the English literature minor by selecting the

following courses. Twenty-four hours (excluding ENGL 1001 and 1002 or equivalents), divided according to the following groups:

- Group I, Language Study (3 hrs.): 4110, 4120, 4130, or 4170;
 Group II, One upper-division elective in British Literature (3 hrs.);
 Group III, Advanced Composition (3 hrs.): 3210;
 Group IV, Rhetoric (3 hrs.): either 4210 or 4220 (a 4 sem.-hour course);
 Group V, Multicultural (3 hrs.): either 4810, 4820, 4830, or 4931 (multicultural literature);
 Group VI, Shakespeare (3 hrs.): 4630;
 Group VII, Methods (3 hrs.): 4027;
 Group VIII, One upper-division elective in American Literature (3 hrs.).

Note: College of Education students pursuing an English Literature minor MUST fulfill the UCCS LPA requirement with a lower-division historical survey course (one of the following: 2410, 2420, 2510, 2520).

MAJOR IN WRITING-INTENSIVE ENGLISH :

Thirty-six hours (excluding ENGL 1001 and 1002 or equivalents), divided according to the following groups. (NOTE: Students pursuing teaching certification for Secondary Education should note below the exemptions and requirements specific to such majors):

- Group I: Surveys (6 hrs.): any two lower division literature surveys. (NOTE: For students pursuing teaching certification both surveys must be historical — 2410, 2420, 2510, 2520).
 Group II: Shakespeare (3 hrs.): 4630.
 Group III: Individual Authors (3 hrs.): 4610, 4620, or 4640.
 Group IV: English or American Literature before 1800 (3 hrs.): 4410, 4420, 4430, 4440, 4450, 4510, 4620, 4640; or 4610, 4710, 4800, 4820, 4870, 4931 when the course deals with pre-1800 English or American literature.
 Group V: Language Study (3 hrs.): 4110, 4120, 4130, or 4170.
 Group VI: Electives (6 hrs.): any two upper-division literature courses (NOTE: Students pursuing teaching certification will need three upper-division literature electives (9 hrs.): one upper-division multicultural literature elective (4810, 4820, 4830, or 4931 when course content is multicultural), and at least one upper-division American literature elective. Among Groups III, IV & VI, both American and British literature must be represented).
 Group VII: Writing (12 hrs.): 3210 (required), 3220, 4210, 4220, 4250, 4260, 4954, or 4986; or 4931, 4995, 4999 when the course focuses on writing; or, if not used in Group V, 4110, 4120, 4130, or 4170; or no more than two among JOUR 4120, 4130, 4160, 4510, and 4520 (all of which have ENGL 3210 as a prerequisite; 4510 and 4520 also have JOUR 4200 as a prerequisite). (NOTE: Students pursuing teaching certification will need three writing courses (9 hrs.) and must take 3210, 4210 or 4220, and 4027.).

FIRST-YEAR COURSES

▲ENGL 1001. 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 1002. 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 1001 or equiv.

▲ENGL 1301. 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: Cons. of dept. ch. and cons. of program director. Limited to Honors Program students. Counts as equiv. of ENGL 2410 for English majors and minors.

▲ENGL 1302. Honors English 2 3 sem. hrs.

Continuation of ENGL 1301, 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 equiv. of ENGL 2420 for English majors and minors.

LOWER-DIVISION COURSES

ENGL 2310. Introduction to Global Literature 3 sem. hrs.

Survey of selected works in English or in translation from non-Anglo-American cultural traditions. Texts can be drawn from African, Asian, European, Latin American and Middle Eastern literatures with a focus on interrelations among works in their historical and cultural contexts. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

▲ENGL 2410. Introduction to British Literature 1 3 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, Lanier, Milton, Pope, Shakespeare, Swift, and Wroth. Typically offered fall term. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

▲ENGL 2420. Introduction to British Literature 2 3 sem. hrs.

Continuation of ENGL 2410, following the development of British literature from the late 18th century to the present. Approaches vary with instructor; authors studied are likely to include Austen, the Brontës, G. Eliot, Joyce, Shaw, the Shelleys, Tennyson, Woolf, and Wordsworth. Typically offered spring term. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

▲ENGL 2510. 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 1001 or equiv. and ENGL 1002 or equiv.

▲ENGL 2520. Introduction to American Literature 2 3 sem. hrs.

Continuation of ENGL 2510, following the development of American literature from the Civil War to the present. Approaches vary with instructor; authors studied are likely to include Bishop, Cather, Chopin, T.S. Eliot, Ellison, Erdrich, Faulkner, Freeman, Frost, Gilman, Hemingway, Hughes, Hurston, James, Jewett, Morrison, O'Connor, Pound, Stein, Twain, Wharton, and Wright. Typically offered spring term. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

▲ENGL 2710. 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 1001 or equiv. and ENGL 1002 or equiv.

▲ENGL 2720. 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 1001 or equiv. and ENGL 1002 or equiv.

▲ENGL 2730. 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 1001 or equiv. and ENGL 1002 or equiv.

▲ENGL 2740. Reading Film as Narrative 3 sem. hrs.

An introductory survey on approaches to film appreciation, stressing methods for analyzing and interpreting how complex verbal and non-verbal representations establish characterizations, structure narratives, and engage important ideas and events. Topical emphasis will vary with instructor, but may include central theories of film interpretation, attention to the history of the cinema, and the integration of specific films into their cultural context. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

▲ENGL 2931. Topics in Literature and Culture 3 sem. hrs.

A thematically-focused introduction to literature, wherein students learn about literary forms and history, master analytical skills, and improve their critical writing. Course emphasis varies, but could focus on such topics as Literature and Social Justice, Literature and Ethics, Literature and Religion, Literature and Science, Literature and Art, etc. Readings are typically drawn from the British, American, or Anglophone traditions, reflecting various genres and periods. Prereq: ENGL 1001 or equiv. and ENGL 1002 or equiv.

UPPER-DIVISION COURSES

ENGL 3210. 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: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.*

ENGL 3220. Writing for the Professions

3 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: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.*

ENGL 4027. Teaching English in the Secondary School

3 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 2227; admission to the College of Education. May not be counted as Literature requirement in Arts and Sciences Curriculum or toward thirty credits required for an M.A. or Ph.D. degree in English.*

ENGL 4110. English Linguistics

3 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: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.*

ENGL 4120. Structure of the English Language

3 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: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.*

ENGL 4130. History of the English Language

3 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 considered. *Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.*

ENGL 4170. Studies in Language

3 sem. hrs.

A detailed study of some aspect of language or language study, including stylistics, sociolinguistics, introductory linguistics, Old English, or semiotics. Consult *Schedule of Classes* or the English Department's Web site for the specific topic. *Prereq: UCCS R and LPA requirements fulfilled.*

May not be counted as Literature requirement in Arts and Sciences College Curriculum.

ENGL 4210. The Processes of Writing

4 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: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.*

ENGL 4220. The Art of Rhetoric: Theory and Application

3 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: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.*

ENGL 4250. Creative Writing: Fiction

3 sem. hrs.

A study in the writing of fiction with an emphasis on the analysis of craft and technique in student and published writing. *Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.*

ENGL 4260. Creative Writing: Poetry

3 sem. hrs.

A study in the writing of poetry with an emphasis on the analysis of craft and technique in student and published writing. *Prereq: UCCS R and LPA requirements fulfilled. May not be counted as Literature requirement in Arts and Sciences College Curriculum.*

ENGL 4310. Studies in Global Literature

3 sem. hrs.

An in-depth exploration of selected works in English or in translation from non-Anglo-American cultural traditions. Texts can be drawn from African, Asian, European, Latin American and Middle Eastern literatures with an emphasis on historical, intellectual and/or cultural contexts. Course focus can vary with instructor. Consult the English Department's web site for specific topic. *Prereq: UCCS R and LPA requirements fulfilled.*

ENGL 4410. British Literature to 1500

3 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: UCCS R and LPA requirements fulfilled.*

ENGL 4420. 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: UCCS R and LPA requirements fulfilled.*

ENGL 4430. 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: UCCS R and LPA requirements fulfilled.

ENGL 4440. 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: UCCS R and LPA requirements fulfilled.

ENGL 4450. 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: UCCS R and LPA requirements fulfilled.*

ENGL 4460. 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: UCCS R and LPA requirements fulfilled.

ENGL 4470. 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: UCCS R and LPA requirements fulfilled.*

ENGL 4480. 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: UCCS R and LPA requirements fulfilled.*

ENGL 4490. 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: UCCS R and LPA requirements fulfilled.*

ENGL 4510. 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: UCCS R and LPA requirements fulfilled.*

ENGL 4520. 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: UCCS R and LPA requirements fulfilled.

ENGL 4530. 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: UCCS R and LPA requirements fulfilled.

ENGL 4550. 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: UCCS R and LPA requirements fulfilled.

ENGL 4560. 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: UCCS R and LPA requirements fulfilled.

ENGL 4610. 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 *Schedule of Classes* or the English Department's Web site for specific author(s).

Prereq: UCCS R and LPA requirements fulfilled.

ENGL 4620. Chaucer 3 sem. hrs.

A study of Chaucer's works with emphasis on his techniques, thematic concerns, cultural contexts, and place in literary history.

Prereq: UCCS R and LPA requirements fulfilled.

ENGL 4630. Shakespeare's Major Plays 3 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.

Prereq: UCCS R and LPA requirements fulfilled.

ENGL 4640. Milton 3 sem. hrs.

A study of Milton's major poetry and prose in the context of his place in 17th-century England.

Prereq: UCCS R and LPA requirements fulfilled.

ENGL 4710. Studies in Genre 3 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 *Schedule of Classes* or the English Department's Web site for specific topic.

Prereq: UCCS R and LPA requirements fulfilled.

ENGL 4720. Literary Criticism 3 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: UCCS R and LPA requirements fulfilled.

ENGL 4750. American Drama 3 sem. hrs.

A study of American drama with emphasis on form and function of the genre. Course emphasis and authors taught can vary with instructor. Consult *Schedule of Classes* or the English Department's Web site for specific topic.

Prereq: UCCS R and LPA requirements fulfilled.

ENGL 4760. British Drama 3 sem. hrs.

A study of British drama with emphasis on form and function of the genre. Course emphasis and authors taught can vary with instructor. Consult *Schedule of Classes* or the English Department's Web site for specific topic.

Prereq: UCCS R and LPA requirements fulfilled.

ENGL 4780. Literature in Film 3 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 *Schedule of Classes* or the English Department's Web site for specific topic.

Prereq: UCCS R and LPA requirements fulfilled.

ENGL 4800. Studies in Literature and Culture 3 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 *Schedule of Classes* or the English Department's Web site for specific topic.

Prereq: UCCS R and LPA requirements fulfilled.

▲ENGL 4810. Race, Ethnicity and Identity in American Literature and Culture 3 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: UCCS R and LPA requirements fulfilled.

▲ENGL 4820. 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 *Schedule of Classes* or the English Department's Web site for specific topic.

Prereq: UCCS R and LPA requirements fulfilled.

▲ENGL 4830. African-American Literature 3 sem. hrs.

A study of major works of fiction, poetry, autobiography, and drama by African-American authors writing from slavery through the present day. Works are usually situated within their historical, biographical, intellectual and cultural contexts. Authors studied generally include Baldwin, Douglass, DuBois,

Dunbar, Ellison, Hansberry, Hurston, Jacobs, Kincaid, Morrison, Walker, Washington, Wideman, Wilson and Wright.

Prereq: UCCS R and LPA requirements fulfilled.

▲ENGL 4840. Post-Colonial Literature 3 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: UCCS R and LPA requirements fulfilled.

ENGL 4860. 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: UCCS R and LPA requirements fulfilled.

ENGL 4870. 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 *Schedule of Classes* or the English Department's Web site for specific topic.

Prereq: UCCS R and LPA requirements fulfilled.

ENGL 4931. Topics in Literature or Writing 3 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, the Vikings, and Meaning and Identity. Consult *Schedule of Classes* or the English Department's Web site for specific topic.

Prereq: UCCS R and LPA requirements fulfilled. If topic is in writing, may not be counted as Literature requirement in Arts and Sciences College Curriculum or toward the credits required for an M.A. or Ph.D. degree in English.

ENGL 4953. Seminar in Literature 3 sem. hrs.

Advanced practice in the techniques and discipline of intensive literary study. Consult *Schedule of Classes* or the English Department's Web site for specific topic.

Prereq: UCCS R and LPA requirements fulfilled.

ENGL 4954. Seminar in Writing 3 sem. hrs.

Advanced practice in the techniques and discipline of writing. Offered in fiction, in poetry and in nonfiction. Consult *Schedule of Classes* or the English Department's web site for specific genre.

Prereq: UCCS R and LPA requirements fulfilled and cons. of instr. May not be counted as Literature requirement in Arts and Sciences College Curriculum.

ENGL 4986. Writing Internship 3 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. S/U grade assessment. *Prereq: UCCS R and LPA requirements fulfilled and cons. of instr. May not be counted as Literature requirement in Arts and Sciences College Curriculum.*

ENGL 4995. Independent Study in English
3 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.
Prereq: UCCS R and LPA requirements fulfilled, cons. of instr., and cons. of dept. ch.

ENGL 4996. Senior Experience in English
3 sem. hrs.
The Senior Experience requirement applies to all students who are seeking a BA degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq: Sr. stndg.*

ENGL 4999. 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: UCCS R and LPA requirements fulfilled, cons. of instr., and cons. of dept. ch.

ENGLISH AS A SECOND LANGUAGE PROGRAM (ESLP)

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

ESLP 1021. Composition 3 sem. hrs.
Develops strategies and skills necessary for successful academic writing. Reviews the fundamentals of paragraph writing and introduces students to writing academic research papers. If required to take both ESLP 1021 and ENGL 1001, a student must take ESLP 1021 first before enrolling in ENGL 1001 (ESLP section) and ESLP 1025. May not register as audit or S/U option. Offered every term.
Prereq: Cons. of instr.

ESLP 1025. Rhetoric and Composition 1 for Non-Native Speakers 2 sem. hrs.
Provides instruction and practice in using standard U.S. grammar, punctuation and mechanics in academic writing. Targets areas that typically remain problematic for advanced ESL writers. May not register as audit or S/U option. Offered every term.
Prereq: Cons. of instr. and must be taken concurrently with an ESLP section of ENGL 1001.

ESLP 1031. Reading 3 sem. hrs.
Develops strategies and skills necessary for successful academic reading. Provides practice with reading comprehension, vocabulary development, critical thinking and reading study skills. May not register as audit or S/U option. Offered every term.
Prereq: Cons. of instr.

ESLP 1041. Listening Comprehension
3 sem. hrs.
Develops strategies and skills necessary for successful listening and speaking in academic settings. Focuses on listening to lectures and news broadcasts and listening to speaking in group discussions and everyday interactions. May not register as audit or S/U option. Offered every term.
Prereq: Cons. of instr.

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, give 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 Klingler College of Arts and Sciences or the Diederich 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 register for a maximum of six credits each semester in Fine Arts courses. However, you must be able to meet any prerequisites before registering for a course. Prerequisites may change after the printing of the bulletin. Please consult the Schedule of Classes at the time of registration.

The tuition cost of enrolling in FIAR courses is included in your Marquette full-time student tuition rate. 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 1201 History of Western Art 1
* HIST 1202 History of Western Art 2
FIAR 1100 Visual Dynamics 1: Concept, Process and Composition
FIAR 2900 Communication Design 1
FIAR 2910 Communication Design 2
* ADPR 3200 Marketing Communications Design and Production

Program Two

(Recommended for Theater Arts Majors)

* HIST 1201 History of Western Art 1
* HIST 1202 History of Western Art 2
FIAR 1000 Observational Drawing and
FIAR 1100 Visual Dynamics 1: Concept, Process & Composition
FIAR 1300 Space, Form and Materials
And TWO courses listed here:
FIAR 2220 Painting: Direct Methods
FIAR 2230 Painting: Indirect Methods
FIAR 2520 Figure Sculpture 1
FIAR 2530 Figure Sculpture 2

Program Three

(Recommended for any major)

* HIST 1201 History of Western Art 1
* HIST 1202 History of Western Art 2
FIAR 1000 Observational Drawing and
FIAR 1100 Visual Dynamics 1: Concept, Process & Composition
And TWO courses (in sequence) from a single MIAD fine arts discipline listed below:
Drawing (FIAR 2000, 2010)
Painting (FIAR 2220, 2230)
Figure Sculpture (FIAR 2520, 2530)
Photography (FIAR 2800, 2810)
Printmaking (FIAR 2300, 2310 2600,2610, 2700, 2710)

Program Four

(Recommended for any major)

* HIST 1201 History of Western Art 1
* HIST 1202 History of Western Art 2
FIAR 1000 Observational c Drawing or FIAR 1100 Visual Dynamics 1: Concept, Process & Composition
FIAR 1300 Space, Form and Materials
FIAR 2500 Sculpture: Carving and Casting
FIAR 2510 Sculpture: Construction – Metal and Wood

MINOR IN ART HISTORY:

* HIST 1201 History of Western Art 1
* HIST 1202 History of Western Art 2
* PHIL 3370 Philosophy of Art and Beauty
Plus three art history course offerings at MIAD

For course descriptions, please refer to the FIAR section in the Diederich College of Communication.

FOREIGN LANGUAGES AND LITERATURES

Chairperson and Associate Professor: Castañeda
Professor: González-Pérez, Taylor, Velleman
Associate Professor: Aguilú de Murphy, Beall, G. Carrillo, Dale, Davies Cordova, Jamison, Kraemer, Lacy, Lafouge, Marquardt, Pasero, Pustejovsky, Sánchez de la Calle
Assistant Professor: Afinoguénova, Bellver, Cortés-Vélez, Gendron, Joda, Hernández, Meyler, Paulk
Adjunct Instructor: Banhidi, Burckhardt, C. Carrillo, C. Coffey, Escudero, Kaftan, Krainz, J. Martin, Petrusha, Vanderheyden

MAJOR IN CLASSICAL LANGUAGES:

Ten courses with a minimum of 30 hours, including LATN 2001, 2002, 3500, 3505; GREK 1001 and 1002; and 10 additional semester hours (3-4 courses) in one of the two tracks described below:

Track 1: Classical Languages

Ten additional semester hours (3-4 courses) in Latin (LATN) or Greek (GREK) courses. A maximum of one course may be taken in courses listed under Classics (CLAS).

Track 2: Classical Languages for Education Majors

Ten additional semester hours (3-4 courses) in Latin (LATN) courses.

Additional Requirements for Track 2: Classical Languages for Education Majors:

1) Passing a competence examination in Latin before being permitted to register for FOLA 4000: Teaching World Languages and Cultures (4 sem. hrs.)

2) Completion of FOLA 4000: Teaching World Languages and Cultures (4 sem. hrs.)

3) Maintenance of a minimum 2.750 grade point average in Latin (LATN) courses.

MAJOR IN CLASSICAL STUDIES:

Twelve courses with a minimum of 36 semester hours, including LATN 2001 and LATN 2002 or GREK 2001 and GREK 2002, HIST 1201 and HIST 3201, PHIL 3610, and 21 elective hours in ancient languages, civilization or tradition.

Electives may be fulfilled with such courses as: POSC 2801, 4801; THEO 2100, 4000; THAR 4200; and CMST 3340, depending on course content.

MAJOR IN FRENCH:

Ten courses with a minimum of 30 semester hours, excluding FREN 1001, FREN 1002, FREN 2001, FREN 2002, FREN 2003, and including courses FREN 3001, FREN 3002, FREN 3100, FREN 3500, FREN 4110, a culture course (FREN 3300, FREN 3310, FREN 3320, FREN 3610), as well as an additional twelve semester hours (4 courses) in one of the three tracks described below. A maximum of one course may be taken in ENGL (FREN 3210).

Track 1: Francophone Literatures, Cultures and Language

One literature course (FREN 3600, FREN 3610, FREN 4500, FREN 4510, FREN 4520, FREN 4530, FREN 4540, FREN 4550), one additional culture course (FREN 3300, FREN 3310, FREN 3320, FREN 3610), and two French elective courses.

Track 2: Business and Culture

FREN 3700 and FREN 3701; one additional culture course (FREN 3300, FREN 3310, FREN 3320, FREN 3610), and one French elective course.

Track 3: Francophone Literatures, Cultures and Language for Education Majors

FREN 3102, one literature course (FREN 3600, FREN 3610, FREN 4500, FREN 4510, FREN 4520, FREN 4530, FREN 4540, FREN 4550), one additional culture course (FREN 3300, FREN 3310, FREN 3320, FREN 3610), and one French elective course.

Additional Requirements for Track 3: Francophone Literatures, Cultures and Language for Education Majors:

1) Passing an official Oral Proficiency Interview (OPI) in French at the level of Intermediate-High on the ACTFL Oral Proficiency Scale before being permitted to register for FOLA 4000: Teaching World Languages and Cultures (4 sem. hrs.)

2) Completion of FOLA 4000: Teaching World Languages and Cultures (4 sem. hrs.)

3) Maintenance of a minimum 2.750 grade point average in the French major with a minimum of a 3.000 grade point average in courses FREN 3001, FREN 3002, FREN 3100, FREN 3120, and FREN 4110 as applicable.

4) Residence in a country in which French is spoken or participation in a structured study abroad program and/or intensive immersion experience. The Department of Foreign Languages and Literatures must approve the program selected.

MAJOR IN GERMAN:

Ten courses with a minimum of 30 hours, excluding courses GRMN 1001, GRMN 1002, GRMN 2001, GRMN 2002, GRMN 2003, and including courses GRMN 3001, GRMN 3030, GRMN 3100, GRMN 3500, and GRMN 3510, as well as an additional fifteen credits (five courses) in one of the two tracks described below:

Track 1: German Language, Literature and Culture

Five courses in German electives. Both GRMN 3200 and GRMN 3210 in English may be counted toward the major.

Track 2: Education Majors

GRMN 3120, GRMN 3200, GRMN 4110, and two courses in German electives excluding GRMN 3210.

Additional Requirements for Track 2: Education Majors:

1) The German section will offer Education Majors an on-going evaluation of the candidates' abilities to understand and produce German, to read and write the language, and to understand the structure of the language. Additionally, an evaluation is made of the candidate's familiarity with current German culture.

2) Passing an official Oral Proficiency Interview (OPI) in German at the level of Intermediate-High on the ACTFL Oral Proficiency Scale before being permitted to register for FOLA 4000: Teaching World Languages and Cultures (4 sem. hrs.)

3) Completion of FOLA 4000: Teaching World Languages and Cultures (4 sem. hrs.)

4) Maintenance of a minimum 2.750 grade point average in the German major with a minimum of a 3.000 grade point average in courses GRMN 3001, GRMN 3100, GRMN 3120, and GRMN 4110 as applicable.

5) Residence in a country in which German is spoken or participation in a structured study abroad program and/or intensive immersion experience. The

Department of Foreign Languages and Literatures must approve the program selected.

Note to majors in Spanish

Heritage learners of Spanish are students of Hispanic background who have been educated in the United States and have been exposed to Spanish in their homes or communities from an early age, but who consider English their primary language. Native speakers of Spanish have been primarily educated in Spanish and consider Spanish their first language.

MAJOR IN: SPANISH LANGUAGE, LITERATURE AND CULTURE:

Ten courses with a minimum of 30 semester hours, excluding courses SPAN 1001, SPAN 1002, SPAN 1003, SPAN 2001, SPAN 2002, and SPAN 2003. Students must complete one of the four Tracks listed below.

Track 1: Spanish Language, Literature and Culture

SPAN 3001, SPAN 3002, SPAN 3300 or SPAN 3310, SPAN 3500, SPAN 3515, SPAN 3520, three semester hours (one course) in Spanish-American literature (SPAN 4600, SPAN 4610, SPAN 4615, or SPAN 4620), and nine semester hours (three courses) in Spanish (SPAN) elective courses.

Track 2: Spanish Language, Literature and Culture for Heritage Speakers

SPAN 3005, SPAN 3300 or SPAN 3310, SPAN 3505, SPAN 3515, SPAN 3520, SPAN 4400, three semester hours (one course) in Spanish-American literature (SPAN 4600, SPAN 4610, SPAN 4615, or SPAN 4620), and nine semester hours (three courses) in Spanish (SPAN) elective courses, excluding SPAN 3001, SPAN 3002, and SPAN 3500. [Education majors must complete SPAN 4110 and SPAN 4120 as two of the three elective courses as well as the Additional Requirements for Track 4: Education Majors.]

Track 3: Spanish Language, Literature and Culture for Native Speakers

SPAN 3005 or SPAN 4110, SPAN 3300 or SPAN 3310, SPAN 3505, six semester hours (2 courses) in Spanish literature (SPAN 4500, SPAN 4505, SPAN 4510, SPAN 4525, SPAN 4550 or SPAN 4560); six semester hours (2 courses) in Spanish-American literature (SPAN 4600, SPAN 4610, SPAN 4615, SPAN 4620, SPAN 4640, SPAN 4660 or SPAN 4670) and nine semester hours (3 courses) in Spanish electives excluding SPAN 3001, SPAN 3002, SPAN 3100, SPAN 3500, SPAN 3515, SPAN 3520, SPAN 3700, SPAN 3710. (Education majors must complete SPAN 4110 and SPAN 4120 as two of their courses, as well as the Additional Requirements for Track 4: Education Majors.)

Track 4: Spanish Language, Literature and Culture for Education Majors

SPAN 3001, SPAN 3002, SPAN 3300 or SPAN 3310, SPAN 3500, SPAN 3515, SPAN 3520, SPAN 4110, SPAN 4120, three semester hours (one course) in Spanish-American literature (SPAN 4600, SPAN 4610, SPAN 4615, or SPAN 4620), and one Spanish (SPAN) elective course.

Additional Requirements for Track 4: Spanish Language, Literature and Culture for Education Majors:

1) Passing an official Oral Proficiency Interview (OPI) in Spanish at the level of Intermediate-High on the ACTFL Oral Proficiency Scale before being permitted to register for FOLA 4000: Teaching World Languages and Cultures (4 sem. hrs.)

2) Completion of FOLA 4000: Teaching World Languages and Cultures (4 sem. hrs.)

3) Maintenance of a minimum 2.750 grade point average in the foreign language major with a minimum of a 3.000 grade point average in courses SPAN 3001, SPAN 3002, SPAN 3005, SPAN 3100, SPAN 4110 and SPAN 4120, as applicable.

4) Residence in a country in which Spanish is spoken or participation in a structured study abroad program and/or intensive immersion experience. The Department of Foreign Languages and Literatures must approve the program selected.

MAJOR IN SPANISH FOR THE PROFESSIONS:

Ten courses with a minimum of 30 semester hours, excluding courses SPAN 1001, SPAN 1002, SPAN 1003, SPAN 2001, SPAN 2002 and SPAN 2003.

Students must complete one of the four Tracks listed below.

Track 1: Spanish for the Business Professions

SPAN 3001, SPAN 3002, SPAN 3100, SPAN 3300 or SPAN 3310, SPAN 3320, SPAN 3500, SPAN 3700, SPAN 3705, and six semester hours (2 courses) Spanish electives.

Track 2: Spanish for the Health Professions

SPAN 3001, SPAN 3002, SPAN 3100, SPAN 3300 or SPAN 3310, SPAN 3320, SPAN 3500, SPAN 3710, SPAN 3715, and six semester hours (2 courses) Spanish electives.

Track 3: Spanish for the Professions for Heritage Speakers

SPAN 3005, SPAN 3300 or SPAN 3310, SPAN 3320, SPAN 3505, SPAN 3100 or SPAN 4110, SPAN 3700 and SPAN 3705 or SPAN 3710 and SPAN 3715, and nine semester hours (three courses) in Spanish (SPAN) elective courses, excluding SPAN 3001, SPAN 3002, and SPAN 3500.

Track 4: Spanish for the Professions for Native Speakers of Spanish

SPAN 3005 or SPAN 4110, SPAN 3300 or SPAN 3310, SPAN 3320, SPAN 3505, SPAN 3705 or SPAN 3715, and fifteen semester hours (five courses) in Spanish (SPAN) elective courses, excluding SPAN 3001, SPAN 3002, SPAN 3100, SPAN 3500, SPAN 3515, SPAN 3520, SPAN 3700, SPAN 3710.

FOREIGN LANGUAGE MINORS

Students are not allowed to get a minor in the same language that they have declared as their major (e.g. major in Spanish Language and Literature and minor in Spanish for the Professions).

MINOR IN CLASSICAL LANGUAGES:

Six courses with a minimum of 20 semester hours, including LATN 2001, LATN 2002, LATN 3500, LATN 3505, GREK 1001 and GREK 1002.

MINOR IN CLASSICAL STUDIES:

Eight courses with a minimum of twenty-four semester hours, including LATN 2001 and LATN 2002 or GREK 2001 and GREK 2002, HIST 1201 and HIST 3201, PHIL 3610, and nine elective hours in ancient languages, civilization, or tradition.

Electives may be fulfilled with such courses as: , POSC 2801, POSC 4801, THEO 2100, THEO 4000, THAR 4200, and CMST 3340, depending on course content.

MINOR IN FRENCH:

Six courses with a minimum of 18 semester hours, excluding FREN 1001, FREN 1002, FREN 2001, FREN 2002, FREN 2003, , and including courses FREN 3001, FREN 3002, FREN 3500 , a culture course (FREN 3300, FREN 3310, FREN 3320 or FREN 3610), and six additional sem. hours (two courses) in French electives, excluding FREN 3200 and FREN 3210. .

MINOR IN GERMAN:

Six courses with a minimum of 18 semester hours, excluding courses GRMN 1001, GRMN 1002, GRMN 2001, GRMN 2002, GRMN 2003,, and including courses GRMN 3001, GRMN 3030, GRMN 3500 and nine additional hours (three courses) in German elective courses. One course, GRMN 3200 or GRMN 3210 in English may be counted toward the minor.

Note to minors in Spanish

Heritage learners of Spanish are students of Hispanic background who have been educated in the United States and have been exposed to Spanish in their homes or communities from an early age, but who consider English their primary language. Native speakers of Spanish have been primarily educated in Spanish and consider Spanish their first language.

MINOR IN SPANISH LANGUAGE,

LITERATURE AND CULTURE:

Six courses with a minimum of 18 semester hours, excluding courses SPAN 1001, SPAN 1002, SPAN 1003, SPAN 2001, SPAN 2002 and SPAN 2003. Students must complete one of the three tracks listed below:

Track 1: Spanish Language, Literature and Culture

SPAN 3001, SPAN 3002, SPAN 3300 or SPAN 3310, SPAN 3500, SPAN 3515 or SPAN 3520, three semester hours (one course) in Spanish (SPAN) elective courses.

Track 2: Spanish Language, Literature and Culture for Heritage Speakers

SPAN 3005, SPAN 3300 or SPAN 3310, SPAN 3505, SPAN 3515 or SPAN 3520, SPAN 4400, and three semester hours (one course) in Spanish (SPAN) elective courses, excluding SPAN 3001, SPAN 3002 and SPAN 3500.

Track 3: Spanish Language, Literature and Culture for Native Speakers

SPAN 3505, SPAN 3005 or SPAN 4110, SPAN 3300 or SPAN 3310, three semester hours (one course) in Spanish literature (SPAN 4500, SPAN 4505, SPAN 4510, SPAN 4525, SPAN 4550 or SPAN 4560); three semester hours (one course) in Spanish-American literature (SPAN 4600, SPAN 4610, SPAN 4615, SPAN 4620, SPAN 4640, SPAN 4660 or SPAN 4670) and three semester hours (one course) in Spanish electives, excluding SPAN 3001, SPAN 3002, SPAN 3100, SPAN 3500, SPAN 3515, SPAN 3520, SPAN 3700, and SPAN 3710.

MINOR IN SPANISH FOR THE PROFESSIONS:

Six courses with a minimum of 18 semester hours, excluding courses SPAN 1001, SPAN 1002, SPAN 1003, SPAN 2001, SPAN 2002 and SPAN 2003. Students must complete one of the four tracks listed below:

Track 1: Spanish for the Business Professions

SPAN 3001, SPAN 3002, SPAN 3300 or SPAN 3310, SPAN 3500, SPAN 3700 and SPAN 3705.

Track 2: Spanish for the Health Professions

SPAN 3001, SPAN 3002, SPAN 3300 or SPAN 3310, SPAN 3500, SPAN 3710 and SPAN 3715.

Track 3: Heritage Learners

SPAN 3005, SPAN 3300 or SPAN 3310, SPAN 3320, SPAN 3505, SPAN 3700 and SPAN 3705 or SPAN 3710 and SPAN 3715.

Track 4: Native Speakers of Spanish

SPAN 3005 or SPAN 4110, SPAN 3300 or SPAN 3310, SPAN 3505, SPAN 3705 or SPAN 3715, and six semester hours (two courses) in Spanish (SPAN) elective courses, excluding SPAN 3001, SPAN 3002, SPAN 3100, SPAN 3500, SPAN 3515, SPAN 3520, SPAN 3700, SPAN 3710.

ELEMENTARY AND INTERMEDIATE LANGUAGE COURSES:

Elementary and intermediate level language courses in Arabic, Chinese, French, German, Italian, Japanese and Spanish are not open to native or near-native speakers of the language for credit. These courses are designed for students who are beginning the study of the language. Registration in these courses may result in no credit being awarded for the course. Students should consult with the Department of Foreign Languages and Literatures regarding the appropriate level and course for which to register.

Arabic (ARBC)

ARBC 1001. Elementary Arabic 1 4 sem. hrs. Introduction to fundamentals of Modern Standard Arabic, including basic grammar, pronunciation and writing system. Emphasis on development of basic language skills: reading, writing, speaking, listening and comprehension. Offered fall term. Open to students with no previous study of Arabic; or by departmental placement.

ARBC 1002. Elementary Arabic 2 4 sem. hrs. Continuation of ARBC 1001. Introduction to spoken and written Modern Standard Arabic. The course focuses on the fundamental language skills: speaking, listening, reading and writing. Offered spring term. *Prereq: ARBC 1001.*

ARBC 2001. Intermediate Arabic 1 3 sem. hrs. Continuation of the study of Modern Standard Arabic, with emphasis on further development of all language skills: reading, writing, speaking and listening. Offered fall term. *Prereq: ARBC 1002; or by departmental placement*

ARBC 2002. Intermediate Arabic 2 3 sem. hrs. Continuation of ARBC 2001. Study of Modern Standard Arabic, with emphasis on further development of all language skills: reading, writing, speaking and listening. Offered spring term. *Prereq: ARBC 2001; or by departmental placement*

ARBC 3200. Culture and Civilization of the Middle East 3 sem. hrs.

Introduction to the most important cultural aspects of the Middle East. Topics may include historical, political and economical developments, social issues, gender, religion, literature, music and art. Knowledge of Arabic language not required.

ARBC 3210. Arabic Literature in English

Translation 3 sem. hrs.

Readings in English translation of selected masterpieces of Arabic and Islamic literature. Knowledge of Arabic language not required. May be counted as part of the Arts and Sciences literature college requirement but not as part of the foreign language requirement.

Classics (CLAS)**CLAS 1001. Greek and Latin Origins of Medical and Specialized Terminology**
3 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. Knowledge of Greek or Latin not required. Does not count toward fulfillment of the foreign language requirement.

CLAS 3000. Greek and Roman Epic Poetry
3 sem. hrs.

A study of the origins and development of classical epic, including readings in English translation from the works of Homer and Vergil. Knowledge of Greek or Latin not required. May be counted as part of the Arts and Sciences literature curriculum requirement, but does not count toward fulfillment of the foreign language requirement.

CLAS 3005. Classical Foundations of European Literature 3 sem. hrs.

An introduction to the classical tradition in Western literature through comparison of ancient and modern texts. Knowledge of Greek or Latin not required. May be counted as part of the Arts and Sciences literature curriculum requirement, but does not count toward fulfillment of the foreign language requirement.

CLAS 3015. Greek and Roman Tragedy
3 sem. hrs.

A study of the origins and development of classical tragedy, with readings in English translation from the work of Aeschylus, Sophocles, Euripides, and Seneca. Knowledge of Greek or Latin not required. May be counted as part of the Arts and Sciences literature curriculum requirement, but does not count toward fulfillment of the foreign language requirement.

CLAS 3020. Greek and Roman Comedy
3 sem. hrs.

Origins and development, with readings in English translation of the individual plays of Aristophanes, Menander, Plautus, and Terence. Knowledge of Greek or Latin not required. May be counted as part of the Arts and Sciences literature curriculum requirement, but does not count toward fulfillment of the foreign language requirement.

▲**CLAS 3025. Classical Mythology** 3 sem. hrs. Greek and Roman myths and legends in ancient literature and religion. Influence of Classical Mythology on the Western literary tradition. The heroic exploits and modern psychological motifs. Survey and viewing of the enormous artistic legacy inspired by the Classical myths. Knowledge of Greek or Latin not required; does not count toward fulfillment of the foreign language requirement. Offered every other year.

CLAS 3030. Greek and Roman Rhetoric

3 sem. hrs.

A study of the origins and development of classical rhetoric, with readings in English translation from the works of Aristotle, Cicero, Seneca, Rhetor, Antiphon, Lysias, Demosthenes, and others. Knowledge of Greek or Latin not required. May be counted as part of the Arts and Sciences literature curriculum requirement, but does not count toward fulfillment of the foreign language requirement.

CLAS 3200. Greek Civilization and Art

3 sem. hrs.

Major achievements of the Ancient Greeks in literature and art presented in a historical framework. Survey of the architectural remains and masterpieces of Greek sculpture. Frequent visual supplementation of art and architecture. Background readings and discussion on such topics as Greek religious cults, the philosophical schools, pan-Hellenic competitions, and the role of the theatre in civic life. Knowledge of Greek not required; does not count toward the foreign language requirement.

CLAS 3205. Roman Civilization and Art

3 sem. hrs.

Major achievements of Ancient Romans in literature, art, and architecture presented in a historical framework. Survey of the architectural remains. Background readings and discussions on such topics as Roman religious cults, the rise of Christianity, Stoicism and Roman Principate, rhetoric and education, and the legacy of Roman law. Knowledge of Latin not required; does not count toward fulfillment of the foreign language requirement.

CLAS 3210. Greek and Roman Literature in English Translation 3 sem. hrs.

Readings in English translation from Greek and Latin authors. Knowledge of Greek or Latin not required. May be counted as part of the Arts and Sciences literature curriculum requirement, but does not count toward fulfillment of the foreign language requirement.

CLAS 4931. Topics in Classical Civilization and Literature 1-3 sem. hrs.

Subject to be announced.
Prereq: Sr. stndg., or cons. of dept. ch.

Chinese (CHNS)**CHNS 1001. Elementary Chinese 1** 4 sem. hrs.

Introduction to fundamentals of Mandarin Chinese, including basic grammar, pronunciation and Chinese characters, with emphasis on reading, writing, speaking, listening and comprehension. Offered fall term. Open to students with no previous study of Chinese or by departmental placement.

CHNS 1002. Elementary Chinese 2 4 sem. hrs.

Continuation of CHNS 1001. Introduction to spoken and written Mandarin Chinese. Course focuses on the fundamental language skills: speaking, listening, reading and writing. Offered spring term.
Prereq: CHNS 1001

CHNS 2001. Intermediate Chinese 1

3 sem. hrs.

Continuation of the study of Mandarin Chinese, with emphasis on further development of all language skills: reading, writing, speaking and listening. Offered fall term.
Prereq: CHNS 1002; or by departmental placement.

CHNS 2002. Intermediate Chinese 2

3 sem. hrs.

Continuation of CHNS 2001. Study of Mandarin Chinese, with emphasis on further development of all language skills: reading, writing, speaking and listening. Offered spring term.
Prereq: CHNS 2001; or by departmental placement.

CHNS 3200. Chinese Culture and Civilization

3 sem. hrs.

Introduction to the most important aspects of Chinese culture and civilization. Topics may include historical and political development of Chinese society, Chinese language, literature, art, film, religions and philosophy. Course taught in English, knowledge of Chinese language not required.

CHNS 3210. Chinese Literature in English Translation 3 sem. hrs.

Readings in English translation of selected masterpieces of Chinese literature. Knowledge of Chinese language not required. May be counted as part of the Arts and Sciences literature college requirement but not as part of the foreign language requirement.

Foreign Language (FOLA)**FOLA 3210. Women in Foreign Literature**
3 sem. hrs.

Focus on a major area of literary study concerned with women writers and/or women's issues in foreign literatures. Taught in English, knowledge of a foreign language not required. Counts toward Women's and Gender Studies; may not be counted toward fulfillment of the foreign language requirement.

FOLA 4000. Teaching World Languages and Cultures 4 sem. hrs.

Study and application of the fundamental principles of effective second language instruction through the exploration of second language acquisition theory, the development of skills for selecting, organizing, providing, and assessing effective second language learning opportunities; practice of instructional technique within clinical contexts; and reflection on teaching performance. Clinical experience requirement: three hours per week for a total of forty hours. Required of all Education majors. Offered fall term.
Prereq: Sr. stndg. and intermediate high performance on an official Oral Proficiency Interview or cons. of dept. ch.

FOLA 4931. Topics in Foreign Language, Culture and Literature 1-3 sem. hrs.

An umbrella course to offer occasional cross-language topics in English about languages, literatures and cultures taught in the Department.

FOLA 4960. Undergraduate Seminar in Foreign Languages and Literatures
1-3 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. Does not count toward fulfillment of academic major or minor.
Prereq: Sr. stndg. or cons. of dept. ch.

FOLA 4995. Independent Study in Foreign Languages and Literatures 1-3 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.*

FOLA 4996. Senior Experience in Foreign Languages and Literatures 3 sem. hrs.

The Senior Experience requirement applies to all students who are seeking a B.A. degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq: Sr. stndg., enrolled in the Klingler College of Arts and Sciences.*

French (FREN)

FREN 1001. Elementary French 1 4 sem. hrs. Introduction to the French language. Fundamentals of comprehension, speaking, reading and writing. Offered fall term. Open to students with no previous study of French; or by departmental placement.

FREN 1002. Elementary French 2 4 sem. hrs. Continuation of FREN 1001, plus supplementary reading. Offered spring term. *Prereq: FREN 1001.*

FREN 2001. Intermediate French 1 3 sem. hrs. Grammar review, oral and written practice, and more intensive reading. Offered fall term. *Prereq: FREN 1002; or by departmental placement.*

FREN 2002. Intermediate French 2 3 sem. hrs. Continuation of FREN 2001. Offered spring term. *Prereq: FREN 2001.*

FREN 2003. Intensive Intermediate French 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 fall term. *Prereq: FREN 1002 with minimum grade of AB, or by departmental placement.*

FREN 3001. Writing Skills in French 3 sem. hrs. Development of effective writing proficiency in French for a variety of contexts (descriptions; explanations; letters; e-mails; and papers) with review of linguistic and grammatical structures. Offered every term. *Prereq: FREN 2002 or FREN 2003; or by departmental placement.*

FREN 3002. Conversational Skills in French 3 sem. hrs. Development of culturally, socially and contextually appropriate conversational skills (oral and aural) about a variety of topics with a focus on linguistic accuracy and fluency. May be taken concurrently with FREN 3001. Offered annually. *Prereq: FREN 2002 or FREN 2003; or cons. of dept ch.*

FREN 3100. Advanced Composition and Conversation in French 3 sem. hrs. Advanced study of oral and written French. Emphasis on idiomatic fluency. Offered annually. *Prereq: FREN 3001 and FREN 3002; or cons. of dept. ch.*

FREN 3120. French Phonetics 3 sem. hrs. Offers an understanding and practice of the basic pronunciation rules of Standard French; the articulation of individual sounds, sound groupings, and

speech patterns. Offered alternate years. *Prereq: FREN 3002; or cons. of dept. ch.*

▲FREN 3200. Contributions of the French and Francophone World 3 sem. hrs. Social, institutional, intellectual and artistic contributions of the French and Francophone world. Taught in English. Knowledge of French not required. May not be counted toward fulfillment of foreign language requirement.

FREN 3210. French and Francophone Literature in English Translation 3 sem. hrs. Readings in English translation of selected masterpieces of French and Francophone literature. Knowledge of French is not required. May not be counted toward fulfillment of teaching major. May be counted as part of the Arts and Sciences literature college requirement but not as part of the foreign language requirement.

▲FREN 3300. French Civilization 3 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 3300 and FREN 3200. *Prereq: FREN 3001 or cons. of dept. ch.*

FREN 3310. 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. *Prereq: FREN 3001; or cons. of dept. ch.*

FREN 3320. Contemporary Issues in the Francophone World 3 sem. hrs. Focuses on the study of current topics, pre-occupations, trends and issues pertaining to various Francophone societies of today in areas such as religion, educational reforms, ethnicity, race, identity, social stratification and economic development. *Prereq: FREN 3001; or cons. of dept. ch.*

FREN 3500. Introduction to Textual Analysis in French 3 sem. hrs. A survey of major genres, styles, and periods of French and Francophone literature designed to prepare students for upper level literature courses with a focus on interpretation of poetry, theater, prose, and contemporary press. May be counted as part of the Arts and Sciences literature curriculum requirement. Offered every term. *Prereq: FREN 3001; or cons. of dept. ch.*

FREN 3600. French and Francophone Film or Theatre 3 sem. hrs. The examination and analysis of French and Francophone film or theatre in relation to thematic motifs. *Prereq: FREN 3500; or cons. of dept. ch.*

FREN 3610. Contemporary French Canada 3 sem. hrs. After a brief historical summary, this course focuses on contemporary Quebec. Exploration of poetry, novels, plays, films, and songs leads to an understanding of "Quebecois" and "Acadian" identity. *Prereq: FREN 3500; or cons. of dept. ch.*

FREN 3700. French for the Professions 3 sem. hrs. An introduction to French terminology and practice in such fields as business, journalism, communications, etc. Offered alternate years. *Prereq: FREN 3001 and FREN 3002; or cons. of dept. ch.*

FREN 3705. Advanced French for the Professions 3 sem. hrs. Advanced French for international business in the French-speaking world. Offered alternate years. *Prereq: FREN 3700; or cons. of dept. ch.*

FREN 4110. Advanced Grammar and Syntax in French 3 sem. hrs. Examines advanced structures, forms, and style of the French language through contextual practice. Offered annually. *Prereq: FREN 3001 and FREN 3002; or cons. of dept. ch.*

▲FREN 4500. The Middle Ages in France: 1050-1450 3 sem. hrs. Major aspects of the period through literature, the arts, and film (in modern French). *Prereq: FREN 3500 or cons. of dept. ch.*

▲FREN 4510. Sixteenth Century French Literature 3 sem. hrs. Major aspects of the Renaissance in France through literature, the arts, and film. *Prereq: FREN 3500; or cons. of dept. ch.*

FREN 4520. Seventeenth Century French Literature 3 sem. hrs. Major aspects of French Classicism through literature, the arts, and film. *Prereq: FREN 3500; or cons. of dept. ch.*

FREN 4530. Eighteenth Century French Literature 3 sem. hrs. Major aspects of the Enlightenment through literature, the arts, and film. *Prereq: FREN 3500; or cons. of dept. ch.*

▲FREN 4540. Nineteenth Century French Literature 3 sem. hrs. Major aspects of the 19th Century in France through literature, the arts, and film. *Prereq: FREN 3500; or cons. of dept. ch.*

FREN 4550. Twentieth and Twenty-First Century French Literature 3 sem. hrs. Major aspects of the period through French and Francophone literature, the arts, and film. *Prereq: FREN 3500; or cons. of dept. ch.*

FREN 4931. Topics in French Language, Culture and Literature 1-3 sem. hrs. Topics vary. Subject to be announced. *Prereq: FREN 3500; or cons. of dept. ch.*

FREN 4995. Independent Study in French 1-3 sem. hrs. Offered every term. *Prereq: Cons. of dept. ch.*

FREN 4999. Senior Thesis in French 2 sem. hrs. Introductory thesis guidance for approved students under the direction of a departmental adviser. *Prereq: Cons. of dept. ch.*

German (GRMN)

GRMN 1001. Elementary German 1 4 sem. hrs. Introduction to the German language. Fundamentals of comprehension, speaking, reading and writing. Offered fall term. Open to students with no previous study of German; or by departmental placement.

GRMN 1002. Elementary German 2 4 sem. hrs. Continuation of GRMN 1001, plus supplementary reading. Offered spring term. *Prereq: GRMN 1001.*

GRMN 2001. Intermediate German 1

3 sem. hrs.

Grammar review, oral and written practice, and more intensive reading. Offered fall term.
Prereq: GRMN 1002; or by departmental placement.

GRMN 2002. Intermediate German 2

3 sem. hrs.

Continuation of GRMN 2001, plus supplementary reading. Offered spring term. *Prereq: GRMN 2001.*

GRMN 2003. Intensive Intermediate German

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 fall term.
Prereq: GRMN 1002 with minimum grade of AB; or by departmental placement.

GRMN 2050. 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 or minor. S/U grade assessment.
Prereq: GRMN 2002 or GRMN 2003.

GRMN 3001. German Composition and Conversation

3 sem. hrs.

Practice in the oral and written use of the German language. Offered every term. *Prereq: GRMN 2002 or GRMN 2003; or by departmental placement.*

GRMN 3030. 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 spring term.
Prereq: GRMN 2002 or GRMN 2003; or cons. of dept. ch.

GRMN 3100. Advanced German Composition and Conversation

3 sem. hrs.

Practice and review of advanced grammatical structures of the German language for further development of oral and written communication skills. Offered annually.
Prereq: GRMN 3001; or cons. of dept. ch.

GRMN 3120. German Phonetics and Advanced Speaking Practice

3 sem. hrs.

German sounds and speech patterns. Offered alternate years. *Prereq: GRMN 3001; or cons. of dept. ch.*

GRMN 3200. German Contributions to Western Civilization

3 sem. hrs.

Readings in English translation dealing with the culture and civilization of German speaking countries. Offered spring term. Knowledge of German not required.

▲GRMN 3210. German Literature in English Translation

3 sem. hrs.

Readings in English translation of principal authors from the Middle Ages to the present day. Knowledge of German not required. May be counted as part of the Arts and Sciences literature requirement but not as part of the foreign language requirement.

▲GRMN 3500. The Modern German Short Story

3 sem. hrs.

An introduction to textual analysis and interpretation concentrating on the German short story in historical and cultural context. Offered annually.
Prereq: GRMN 3030; or cons. of dept. ch.

GRMN 3510. Thematic Surveys in German Literature

3 sem. hrs.

Survey of selected themes, forms, or periods in German literature. Subject to be announced. May be repeated for credit when the topic varies. Offered annually. *Prereq: GRMN 3500; or cons. of dept. ch.*

GRMN 3700. German for the Professions

3 sem. hrs.

An introduction to German terminology and practice in such fields as business, journalism, communications, etc. *Prereq: GRMN 3001; or cons. of dept. ch.*

GRMN 4110. Advanced German Grammar

3 sem. hrs.

Grammatical structure of the German language in context with other linguistic areas. Offered annually. *Prereq: GRMN 3001; or cons. of dept. ch.*

GRMN 4505. German Drama

3 sem. hrs.

Significant German drama from Lessing to the present. *Prereq: GRMN 3500; or cons. of dept. ch.*

GRMN 4515. The German Novelle

3 sem. hrs.

Novelle: the genre and representative works. *Prereq: GRMN 3500; or cons. of dept. ch.*

GRMN 4525. German Literature: From the Twelfth to the Eighteenth Century

3 sem. hrs.

Principal works of the Medieval, Renaissance, and Baroque periods in German literature. *Prereq: GRMN 3500; or cons. of dept. ch.*

GRMN 4530. Eighteenth Century German Literature

3 sem. hrs.

Authors and works of the Enlightenment, Storm and Stress, and Classicism, including Goethe's late works. *Prereq: GRMN 3500; or cons. of dept. ch.*

GRMN 4540. Nineteenth Century German Literature

3 sem. hrs.

Romanticism and Realism in German literature. *Prereq: GRMN 3500; or cons. of dept. ch.*

GRMN 4550. Twentieth and Twenty-First Century German Literature

3 sem. hrs.

Study of German authors and works of such periods as Naturalism, Neo-Romanticism, Expressionism through the most current literary trends. *Prereq: GRMN 3500; or cons. of dept. ch.*

GRMN 4931. Topics in German Language, Culture and Literature

1-3 sem. hrs.

Topics vary. Subject to be announced.
Prereq: Sr. stndg. or cons. of dept. ch.

GRMN 4961. Workshop in German/English Translation

1-3 sem. hrs.

A Practical workshop to familiarize advanced students with the problems of and processes required in translating from German to English. Different non-literary texts supplied by outside sources will be assigned to each student. Discussions will involve general principles of translating, as well as text-specific problems. *Prereq: Cons. of instr.*

GRMN 4995. Independent Study in German

1-3 sem. hrs. Offered every term.

Prereq: Cons. of dept. ch.

GRMN 4999. Senior Thesis in German

2 sem. hrs.

Introductory thesis guidance for approved students under the direction of a departmental adviser.
Prereq: Cons. of dept. ch.

Greek (GREK)

GREK 1001. Elementary Greek 1

4 sem. hrs. Morphology and syntax of Attic Greek of the 5th-4th centuries B.C., the basis for all later literary dialects, such as Hellenistic and Koine (the language of the New Testament), and extending into the Byzantine period. Grammar exercises and readings of original texts. Offered fall term. Open to students with no previous study of Greek; or by departmental placement.

GREK 1002. Elementary Greek 2

4 sem. hrs. Continuation of GREK 1001. Exercises in Attic Greek morphology and syntax. Composition in Ancient Greek. Development of translation and comprehension abilities with extensive reading from original texts of Aristophanes, Demosthenes, and the New Testament. Offered spring term.
Prereq: GREK 1001.

GREK 2001. Intermediate Greek 1

3 sem. hrs. Review of Greek morphology and syntax, with connected readings from Greek prose authors including Plato. Offered fall term.
Prereq: GREK 1002; or by departmental placement.

GREK 2002. Intermediate Greek 2

3 sem. hrs. Extensive readings in Greek from Homer's Iliad and Odyssey. Background readings and discussions on the nature of oral epic, the Mycenaean world, and the archaeological evidence for the Trojan War. Study of dactylic hexameter meter and metrical reading of Homeric lines. Offered spring term.
Prereq: GREK 2001; or by departmental placement.

GREK 3500. Studies in Classical Greek Literature

1-3 sem. hrs. Variable readings in Classical Greek literature. May be repeated when course content is different.
Prereq: GREK 2002; or cons. of dept. ch.

GREK 4931. Topics in Greek Language, Culture and Literature

1-3 sem. hrs.

Subject to be announced.
Prereq: Sr. stndg. or cons. of dept. ch.

GREK 4995. Independent Study in Greek

1-3 sem. hrs. Offered every term.

Prereq: Cons. of dept. ch.

Italian (ITAL)

ITAL 1001. Elementary Italian 1

4 sem. hrs. Introduction to the Italian language Fundamentals of comprehension, speaking, reading and writing. Offered fall term. Open to students with no previous study of Italian; or by departmental placement.

ITAL 1002. Elementary Italian 2

4 sem. hrs. Continuation of ITAL 1001 with emphasis on further development of vocabulary, and basic conversation through supplemental readings. Offered spring term.
Prereq: ITAL 1001.

ITAL 2001. Intermediate Italian 1

3 sem. hrs. Grammar review, oral and written practice, and supplemental readings and activities to develop cultural awareness. Offered fall term.
Prereq: ITAL 1002; or by departmental placement.

ITAL 2002. Intermediate Italian 2

3 sem. hrs. Continuation of ITAL 2001 plus further development and practice of all language skills. Offered spring term.
Prereq: ITAL 2001; or by departmental placement.

ITAL 3001. Italian Composition and Conversation 3 sem. hrs.

Grammar review and practice in the oral and written use of the Italian language.

Prereq: ITAL 2002; or by departmental placement.

ITAL 3100. Advanced Italian Composition and Conversation 3 sem. hrs.

Practice and review of advanced grammatical structures of the Italian language for further development of oral and written communication skills.

Prereq: ITAL 3001; or cons. of dept. ch.

ITAL 3200. Italian Culture and Civilization 3 sem. hrs.

Readings and lectures in English dealing with different aspects of Italian culture as seen through its history, art, literature and film. Knowledge of Italian not required.

▲ITAL 3210. Italian Literature in English Translation 3 sem. hrs.

Readings in English translation of selected masterpieces of Italian literature. Knowledge of Italian not required. May be counted as part of the Arts and Sciences literature college requirement but not as part of the foreign language requirement.

ITAL 4931. Topics in Italian Language, Culture and Literature 3 sem. hrs.

Topics vary. Subject to be announced.

Prereq: ITAL 3001; or cons. of dept. ch.

Japanese (JPNS)**JPNS 1001. Elementary Japanese 1** 4 sem. hrs.

Introduction to the Japanese language. Fundamentals of comprehension, speaking, reading and writing. Offered fall term. *Prereq: No previous study of Japanese; or by departmental placement.*

JPNS 1002. Elementary Japanese 2 4 sem. hrs.

Continuation of JPNS 1001 with emphasis on further development of oral communication skills, listening, reading and basic character writing in Japanese. Offered spring term.

Prereq: JPNS 1001.

JPNS 2001. Intermediate Japanese 1 3 sem. hrs.

Grammar review, further development of intermediate level skills in listening, speaking, reading and writing Japanese characters. Emphasis on Japanese culture throughout the course. Offered fall term.

Prereq: JPNS 1002; or by departmental placement.

JPNS 2002. Intermediate Japanese 2 3 sem. hrs.

Continuation of JPNS 2001 with emphasis on further development of oral communication skills, listening, reading and writing in Japanese. Offered spring term.

Prereq: JPNS 2001; or by departmental placement.

JPNS 3200. Japanese Culture and Civilization 3 sem. hrs.

Readings and lectures in English dealing with the culture and civilization of Japan. Knowledge of Japanese not required.

▲JPNS 3210. Japanese Literature in English Translation 3 sem. hrs.

Readings in English translation of selected masterpieces of Japanese literature. Knowledge of Japanese not required. May be counted as part of the Arts and Sciences literature college requirement but not as part of the foreign language requirement.

Latin (LATN)**LATN 1001. Elementary Latin 1** 4 sem. hrs.

Introduction to Latin morphology and syntax, with graded readings and cultural information. Offered fall term. Open to students with no previous study of Latin; or by departmental placement.

LATN 1002. Elementary Latin 2 4 sem. hrs.

Continuation of LATN 1001. Exercises in Latin morphology and syntax with graded readings and cultural information. Offered spring term.

Prereq: LATN 1001; or by departmental placement.

LATN 2001. Intermediate Latin 1 3 sem. hrs.

Exercises in advanced Latin morphology and syntax with graded readings in Latin prose and poetry and cultural information. Offered fall term.

Prereq: LATN 1002; or by departmental placement.

LATN 2002. Intermediate Latin 2 3 sem. hrs.

A continuation of LATN 2001. Review of Latin morphology and syntax with extended readings from Latin literature. Offered spring term.

Prereq: LATN 2001; or by departmental placement.

▲LATN 3500. Survey of Republican Latin Literature 3 sem. hrs.

Survey of Latin Literature through the end of the Roman Republic, with emphasis on reading, translation, analysis, and composition. Offered fall term.

Prereq: LATN 2002; or cons. of dept. ch.

LATN 3505. Survey of Later Latin Literature 3 sem. hrs.

Survey of Latin Literature including Imperial and Medieval Latin, with emphasis on reading, translation, analysis and composition. Offered spring term.

Prereq: LATN 2002; or cons. of dept. ch.

LATN 4100. Latin Prose Composition 3 sem. hrs.

Systematic review of Latin syntax. Exercises of increasing difficulty in writing Latin prose. Analysis of prose of selected Roman authors. Creative writing in Latin.

Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

LATN 4115. Medieval Latin 3 sem. hrs.

Reading, translation, and analysis of a wide selection of Medieval Latin texts in prose and verse.

Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

LATN 4505. Vergil: Aeneid 3 sem. hrs.

Translation of selections from Books 1-12 of Vergil's great national epic, the *Aeneid*, telling of the journey of Aeneas from fallen Troy to the shores of Italy. Background readings and discussions on Vergil's literary debt to Homer, The *Aeneid* as a national epic, and the Roman view of the Trojan legacy.

Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

LATN 4510. Horace: Odes 3 sem. hrs.

Reading, translation, and analysis of selected lyric poems of Horace.

Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

LATN 4515. Roman Elegiac Poetry 3 sem. hrs.

Translations of selections from the love poems of Tibullus, Propertius, and Ovid. Background readings and discussions on the origin and conventions of Roman elegiac poetry. Study of the elegiac couplet.

Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

LATN 4520. Roman Comedy: Plautus and Terence 3 sem. hrs.

Reading in Latin of several comedies from the works of Plautus and Terence, Rome's surviv-

ing comic playwrights. Comedies translated may include Plautus' *Miles Gloriosus*, *Menaechmi*, and *Mostellaria*; and Terence's *Adelphi* and *Woman of Andros*. Background readings and discussion on the origin and conventions of Roman comedy and the technicalities of staging a Roman comedy.

Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

LATN 4525. Tacitus: Germania and Agricola 3 sem. hrs.

Reading, translation, and analysis of selections from the shorter works of Tacitus, with additional selections from the *Annales*.

Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

LATN 4530. Cicero: Political and Philosophical Writings 3 sem. hrs.

Reading, translation, and analysis of selections from the speeches and dialogues of Cicero.

Prereq: LATN 3500 or LATN 3505; or cons. of dept. ch.

LATN 4550. Advanced Studies in Latin Poetry 3 sem. hrs.

Reading, translation and analysis of a major Latin poet such as Catullus, Ovid or Juvenal.

Prereq: LATN 3500 or LATN 3505; or cons. of instr.

LATN 4560. Advanced Studies in Latin Prose 3 sem. hrs.

Reading translation and interpretation of a major Latin prose author such as Sallust, Livy, Seneca, Quintilian or St. Augustine.

Prereq: LATN 3500 or LATN 3505; or cons. of instr.

LATN 4931. Topics in Latin Language, Culture and Literature 1-3 sem. hrs.

Topics vary. Subject to be announced.

Prereq: Sr. stndg. or cons. of dept. ch.

LATN 4995. Independent Study in Latin 1-3 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.*

LATN 4999. Senior Thesis in Latin 2 sem. hrs.

Introductory thesis guidance for approved students under the direction of a departmental adviser.

Prereq: Cons. of dept. ch.

Spanish (SPAN)**SPAN 1001. Elementary Spanish 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 1001 must register for SPAN 1003. Not open to students with native or near native fluency.

SPAN 1002. Elementary Spanish 2 4 sem. hrs.

Continuation of SPAN 1001 with emphasis on fundamentals of comprehension, speaking, reading and writing. Offered every term. *Prereq: SPAN 1001; not open to students with native or near native fluency.*

SPAN 1003. 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. Two or

more years of high school Spanish and departmental placement. Not open to students with native or near native fluency.

SPAN 2001. Intermediate Spanish 1

3 sem. hrs.

Grammar review, oral and written practice, and more intensive reading. Offered every term. *Prereq: SPAN 1002; or SPAN 1003; or by departmental placement. Not open to students with native or near native fluency.*

SPAN 2002. Intermediate Spanish 2

3 sem. hrs.

Continuation of SPAN 2001. Offered every term. *Prereq: SPAN 2001; not open to students with native or near native fluency.*

SPAN 2003. Intensive Intermediate Spanish

4 sem. hrs.

Concentrated grammar review with conversation and extensive reading. Aimed to give qualified students the opportunity to complete the intermediate level and a faster and more demanding pace. *Prereq: SPAN 1002 or SPAN 1003 with minimum grade of AB; or by departmental placement. Not open to students with native or near native fluency.*

SPAN 3001. Grammar Review and Writing

3 sem. hrs.

Development of writing proficiency in Spanish through a variety of texts. Review and refinement of language structures and linguistic functions for more effective writing. Offered every term. *Prereq: SPAN 2002 or 2003; or by departmental placement. Not open to students with native or near native fluency.*

SPAN 3002. Spoken Spanish

3 sem. hrs.

Development of oral proficiency in Spanish within a wide range of contexts. Focus on activities and strategies to improve accuracy and fluency. May be taken concurrently with SPAN 3001. Offered every term. *Prereq: SPAN 3001; or cons. of dept. ch. Not open to students with native or near native fluency.*

SPAN 3005. Spanish Grammar Review and Writing for Heritage Speakers

3 sem. hrs.

Acquaints heritage speakers with grammatical structures of the Spanish language for further development of their oral and written communication skills. Special emphasis placed on reading and lexical development, grammar review, orthographic practice and composition. Offered fall term. *Prereq. By departmental placement or cons. of dept. ch.*

SPAN 3100. Advanced Spanish Composition and Conversation

3 sem. hrs.

Practice and review of advanced grammatical structures of the Spanish language for further development of oral and written communication skills. Offered every term. *Prereq: SPAN 3001 and SPAN 3002, or SPAN 3005; or cons. of dept. ch. Not open to students with native or near native fluency.*

SPAN 3210. Hispanic Cultures and Literatures in English

3 sem. hrs.

Readings in English covering the major cultural, social and literary developments in Hispanic literature with emphasis on outstanding literary works and figures. Taught in English, knowledge of Spanish not required. May be counted as part of the Arts and Sciences literature requirement but not as part of the foreign language requirement.

SPAN 3300. Peoples and Cultures of Spain

3 sem. hrs.

Historical development of the cultures of Spain from early times to the present. The course will explore various topics pertaining to Spanish society, literatures, politics, art, music and film. Offered fall term. *Prereq: SPAN 3001 or SPAN 3005; or cons. of dept. ch.*

▲SPAN 3310. Peoples and Cultures of Spanish America

3 sem. hrs.

A multidisciplinary and historical study of the development of the cultures and civilizations of Spanish-speaking America from pre-Columbian days to the present. Emphasis on the gradual evolution of the different artistic forms present in such areas as architecture, music, painting, literature, history, politics, education, art, and film. Offered spring term. *Prereq: SPAN 3001 or SPAN 3005; or cons. of dept. ch.*

▲SPAN 3320. Contemporary Issues in the Hispanic World

3 sem. hrs.

Focuses on the study and discussion of current topics, preoccupations, trends and issues pertaining to various Hispanic societies of today in areas such as religion, educational reforms, ethnicity, race, identity, social stratification, and economic development. Offered every term. *Prereq: SPAN 3300 or SPAN 3310; or cons. of dept. ch.*

▲SPAN 3500. Introduction to Literary Analysis in Spanish

3 sem. hrs.

Basic literary concepts and analysis of the four genres, with intensive practice in reading and oral comprehension. Offered every term. *Prereq: SPAN 3001; or cons. of dept. ch. Not open to students with native or near native fluency.*

▲SPAN 3505. Introduction to Literary Analysis in Spanish for Heritage and Native Speakers

3 sem. hrs.

Acquaints heritage speakers of Spanish with basic literary concepts and analysis of the four genres, the principal literary movements, and representative authors in the Hispanic world. Offered spring term. *Prereq. SPAN 3005; or cons. of dept. ch.*

SPAN 3515. Masterpieces of Early Spanish Literature

3 sem. hrs.

Spanish literature from its origin to the end of the 17th century. Readings include Berceo, Juan Ruiz, Garcilaso de la Vega, Fernando de Rojas, San Juan de la Cruz, Lope de Vega, Cervantes, and Quevedo. Offered fall term. *Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch. Not open to students with native or near native fluency.*

SPAN 3520. Masterpieces of Modern Spanish Literature

3 sem. hrs.

Continuation of SPAN 3515. Representative Spanish literary works from the 18th century to the present. Readings include Moratin, Larra, Bécquer, Zorrilla, Unamuno, García Lorca and Rivas. Offered spring term. *Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch. Not open to students with native or near native fluency.*

SPAN 3700. Introduction to Business Spanish

3 sem. hrs.

A practical overview of Spanish commercial terminology, vocabulary and correspondence used in modern and contextualized business settings in the Hispanic world. Offered fall term. *Prereq: SPAN 3001 or SPAN 3005; or cons. of dept. ch. Not open to students with native or near native fluency.*

SPAN 3705. Advanced Spanish for Business

3 sem. hrs.

An advanced course designed to train students to deal successfully with a linguistic, geographic and commercial context with business components and practices closely related to the Hispanic business world of today. Offered spring term.

Prereq: SPAN 3700 for non-native speakers of Spanish or SPAN 3005; or cons. of dept. ch.

SPAN 3710. Introduction to Spanish for the Health Professions

3 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 fall term.

Prereq: SPAN 3001 or SPAN 3005; or cons. of dept. ch. Not open to students with native fluency in Spanish.

SPAN 3715. Advanced Spanish for the Health Professions

3 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. Service Learning is required in this course. Offered spring term. *Prereq: SPAN 3710 for non-native speakers of Spanish or SPAN 3005; or cons. of dept. ch.*

SPAN 4110. Advanced Spanish Grammar and Syntax

3 sem. hrs.

Theoretical and practical study of selected major syntactic structures of Spanish. Emphasis on the development of advanced-level language functions, dialect variation, contrastive analysis, and pedagogical implications. Offered spring term.

Prereq: SPAN 3001 and SPAN 3002, or SPAN 3005; or cons. of dept. ch.

SPAN 4120. Spanish Phonetics and Applied Linguistics

3 sem. hrs.

Study of Spanish phonetics, phonological and orthographic systems, morphological and syntactic structures, and pragmatics. Emphasis on articulation, conditioned and dialectal variation, acquisition of Spanish by English-speaking learners, and pedagogical implications. Offered annually.

Prereq: SPAN 3001, SPAN 3500; or cons. of dept. ch.

SPAN 4140. Spanish Second Language Acquisition

3 sem. hrs.

Introduction to theories and approaches in second language acquisition. Examination of issues such as the similarities and differences between first and second language acquisition, theories of second language acquisition, factors that influence the language learning process, cognitive and socio-cultural perspectives, the effect of study abroad on the development of second language acquisition, the testing of Spanish and the role of instruction in Spanish second language learning.

Prereq: SPAN 3001 and SPAN 3002, or SPAN 3005; or cons. of dept. ch.

SPAN 4150. Spanish as World Language

3 sem. hrs.

Study of the status of Spanish in the world with reference to areas such as standardization, language history and variation, linguistic unification and fragmentation, discourse analysis, pragmatics and contact with other world languages. *Prereq: SPAN 3001 and SPAN 3002, or SPAN 3005; or cons. of dept. ch.*

SPAN 4310. Spanish Film and Society

3 sem. hrs.

A comprehensive study of Spanish film. Special attention to the representation of key elements of the Spanish identity, such as family relations, culture, sex, gender, class, politics, and power. Course materials include films and readings in film theory. *Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch.*

SPAN 4315. Spanish-American and Latino Film/Society 3 sem. hrs.

Study of Spanish-American and Latino film in accordance with contemporary cultural and film theory. Special attention to the representation of key elements of the Hispanic identity through culture, class, gender, sexuality, religion, politics and/or power. Viewings may include documentaries, feature length films, short films or films based on literature in and outside of class. *Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch.*

SPAN 4350. Nobel Prize Winners of the Hispanic World 3 sem. hrs.

Study of the literary achievements and representative works of such Hispanic Nobel Prize recipients as Alexandre, Asturias, Benavente, Cela, Echegaray, García Márquez, Jiménez, Mistral, Neruda and Paz. *Prereq: SPAN 3505, SPAN 3515, or SPAN 3520; or cons. of dept. ch.*

▲SPAN 4400. United States Latino/a Literature 3 sem. hrs.

A comprehensive study of U.S. Latinos/as' struggle for identity based on the ethnic, economic, historical, and cultural position of the Spanish-speaking population in the United States. Reading generally includes Anaya, Castillo, Chávez, Cisneros, Díaz, and Rodríguez, among others. *Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch.*

SPAN 4450. Afro-Hispanic Caribbean Literature and Culture 3 sem. hrs.

Exploration of the relationship between literature and culture in the Afro-Hispanic Caribbean by focusing on themes of slavery, race, class, identity, religion, immigration and politics through the works of such writers as Manzano, Gómez de Avellaneda, Villaverde, Barnet, Rodríguez Juliá, Palézs Matos, Guillén and Morejón. *Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch.*

SPAN 4500. Race, Culture and Religion in Early Spanish Literature 3 sem. hrs.

A study of representative literary texts from the Spanish Middle Ages to the 16th century with emphasis on both literary and cultural issues. Works studied generally include *Poema del Mio Cid*, *Libro de Buen Amor*, *La Celestina* and lyrical poetry. *Prereq: SPAN 3505 or SPAN 3515; or cons. of dept. ch.*

SPAN 4505. The Spanish Renaissance

3 sem. hrs.

Readings and analysis in literary historical context of selected, significant works from representative authors such as Lope de Vega, Calderón de la Barca, Tirso de Molina, Fray Luis de León, San Juan de la Cruz, Sant- Teresa de Jesús, and Góngora. *Prereq: SPAN 3505 or SPAN 3515; or cons. of dept. ch.*

SPAN 4510. Cervantes' Don Quijote

3 sem. hrs.

In-depth study and analysis of Cervantes' masterpiece *Don Quijote* within the historical, political, and cultural context of the Spanish Golden Age. Special attention to his life, his novelistic theories, his literary works and importance in the creation of the

modern novel. *Prereq: SPAN 3505 or SPAN 3515; or cons. of dept. ch.*

SPAN 4525. Spanish Literature: Eighteenth and Nineteenth Centuries 3 sem. hrs.

The major figures of the Enlightenment, Neoclassic, Romantic, Realist and Naturalist movements in Spain. Readings include Cadalso, Larra, Pardo Bazán, Clarín, and Galdós. *Prereq: SPAN 3505 or SPAN 3520; or cons. of dept. ch.*

SPAN 4550. Twentieth and Twenty-First Century Spanish Literature 3 sem. hrs.

Non-dramatic literature after 1898 with emphasis on the social significance of literary production in contemporary Spain. Readings include Unamuno, Laforet, Matute, Delibes, Goytisolo, and Vázquez Montalbán. *Prereq: SPAN 3505 or SPAN 3516; or cons. of dept. ch.*

SPAN 4560. Contemporary Spanish Theater 3 sem. hrs.

A study of the major formal and thematic developments in contemporary peninsular Spanish theater with emphasis on the works of such dramatists as Valle Inclán, Mihura, Casona, Sastre, Buero Vallejo, García Lorca, Nieva, and Pedrero. *Prereq: SPAN 3505 or SPAN 3520; or cons. of dept. ch.*

SPAN 4600. Spanish-American Literature: Pre-Columbian to Baroque 3 sem. hrs.

This course presents a panoramic overview of the major writers and relevant literary manifestations present in the Hispanic World from the pre-Columbian days (e.g. Aztecs, Mayans and Incas), the Baroque. Writers studied generally include: Colón, Cortés, Las Casas, Inca Garcilaso de la Vega, Sor Juana, among others. Offered alternate years. *Prereq: SPAN 3505 or SPAN 3515; or cons. of dept. ch.*

SPAN 4610. Spanish-American Literature: Eighteenth and Nineteenth Centuries 3 sem. hrs.

Overview of the development of literature in Spanish America during the 18th and 19th centuries. Major movements studied include Romanticism, Realism, and Naturalism. Topics of particular interest include the promotion of independence, the search for national identity, and efforts to reform colonial practices such as slavery. Writers studied generally include: Fernandez de Lizardi, Bello, Bolívar, Echeverría, Isaacs, Gómez de Avellaneda, Sarmiento, and Martí, among others. Offered alternate years. *Prereq: SPAN 3505, SPAN 3515, or SPAN 3520; or cons. of dept. ch.*

SPAN 4615. Spanish-American Literature: Modernismo and Vanguardismo 3 sem. hrs.

Study of Modernismo and the avant-garde movements in Spanish America. Writers studied include: Darío, Rodó, Huidoboro, Storni, Vallejo and Borges among others. *Prereq: SPAN 3505 or SPAN 3520; or cons. of dept. ch.*

SPAN 4620. Spanish-American Literature: The Boom to the Twenty-First Century 3 sem. hrs.

Study of various literary modes of thought and tendencies present in the Spanish America throughout the 20th century to the present in areas such as poetry, the short story, the short novel and the essay. Emphasis on the Boom and post-Boom tendencies. Writers studied generally include: Paz, Borges, Fuentes García Márquez, Allende, Poniatowska and Menchú, among others. Offered alternate years. *Prereq: SPAN 3505 or SPAN 3520; or cons. of dept. ch.*

SPAN 4640. Novels and Novelists in Spanish-America 3 sem. hrs.

This course focuses on the different trends, forms, and contents of the Spanish American novel as a genre, with emphasis on the works of such modern and cosmopolitan writers as Sabato, Fuentes, Carpentier, Ferré, Allende, Esquivel, Vargas Llosa and García Márquez. *Prereq: SPAN 4600, SPAN 4610, SPAN 4615 or SPAN 4620; or cons. of dept. ch.*

SPAN 4660. Spanish-American Theatre 3 sem. hrs.

Study of Spanish-American theatre from Colonial times to present. Writers studied include Sor Juana, Díaz, Gambaro, Marqués, Sánchez, Usigli and Wolf, among others. *Prereq: SPAN 3505, SPAN 3515 or SPAN 3520; or cons. of dept. ch.*

SPAN 4670. Spanish-American Short Story 3 sem. hrs.

Study of the evolution of the Spanish-American short story. Writers studied include Borges, Cortázar, Donoso, Ferré, Fuentes, García, Marquéz, Quiroga, Rulfo and Valenzuela, among others. *Prereq: SPAN 4600, SPAN 4610, SPAN 4615 or SPAN 4620; or cons. of dept. ch.*

SPAN 4931. Topics in Spanish Language, Culture and Literature 1-3 sem. hrs.

Topics vary. Subject to be announced. *Prereq: SPAN 3500 or SPAN 3505; or cons. of dept. ch.*

SPAN 4960. Senior Seminar in Spanish 3 sem. hrs.

Advanced study of a cultural, linguistic or literary theme in Spanish. Seminar will fulfill the College of Arts and Sciences Senior Experience Curriculum requirement. Specific topic of the seminar to be announced in the *Schedule of Classes*. *Prereq: Major or minor in Spanish and Sr. stdng.; or cons. of dept. ch.*

SPAN 4995. Independent Study in Spanish 1-3 sem. hrs.

Offered every term. *Prereq: Cons. of dept. ch.*

SPAN 4996. Senior Experience in Spanish 3 sem. hrs.

The Senior Experience requirement applies to all students who are seeking a B.A. degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq: Sr. stdng., enrolled in the Klingler College of Arts and Sciences.*

SPAN 4999. Senior Thesis in Spanish 2 sem. hrs.

Introductory thesis guidance for approved students under the direction of a departmental adviser. *Prereq: Cons. of dept. ch.*

HISTORY (HIST)

Chairperson and Professor: Marten
Professor: Avella, Ball, Bicha (*Emeritus*), Donnelly, Gardinier (*Emeritus*), Avella, Ball, Bicha (*Emeritus*), Donnelly, Gardinier (*Emeritus*), Krugler, Phayer (*Emeritus*), Prucha (*Emeritus*), Jablonsky, Ruff, Theoharis (*Emeritus*), Weber (*Emeritus*), Zupko (*Emeritus*)
Associate Professor: C. Hay, R. Hay (*Emeritus*), Meissner, Naylor, Zeps
Assistant Professor: Donoghue, Efford, K. Foster, Guenther, Kahrl, Knox, Korieh, Matthew, McMahon, Wert
Visiting Assistant Professor: McDaniel,
Instructor: Hauser, Sawkins

MAJOR IN HISTORY:

HIST 1001, 1002, 1101, and one of the following: 1301, 1401, or 1501; or HIST 1001, 1002, 2101, and 2102; plus 21 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 3101-3199, 4103-4199

Group II, Europe: Courses 3201-3299, 3751, 4200-4299

Group III, Asia, Africa and Latin America:
 Courses 3300-3499, 4300-4600

The 21 hours selected must also include one HIST 4953 course and one HIST 4955 course. HIST 4953, 4955 and 4996 may be used to satisfy the group distribution requirement based on course content.

Students must complete HIST 4953 prior to taking HIST 4955. Senior experience courses taken in the history department may also count toward the upper division requirement. Students may enroll in 5000-level graduate courses (cross-listed for undergraduates at the 4000-level) with permission of the instructor. *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.

Students who plan to seek Wisconsin Department of Public Instruction certification in History must complete 24 hours of upper division course work. The 24 hours must include at least one course from Group I, two courses from Group II (one ancient/medieval and one modern), one course from Group III, and HIST 4953 and 4955. Based on course content, HIST 4953 and 4955 may be used to satisfy the group distribution requirement.

MINOR IN HISTORY:

HIST 1001, 1002, 1101, and one of the following: 1301, 1401, or 1501; or HIST 1001, 1002, 2101, and 2102; plus twelve 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 4953 or 4955. Based on course content, HIST 4953 or 4955 may be used to satisfy the group distribution requirement.

Requirements for the Interdisciplinary Minor in Public History can be found in the Undergraduate Bulletin under Interdisciplinary Majors and Minors.

To pursue Department of Public Instruction certification, College of Education students should follow the history minor by selecting the following courses. Twenty-four hours, including HIST 1001, 1002, 1101, and one of the following: HIST 1301, 1401, or 1501; or HIST 1001, 1002, 2101, and 2102; plus 12 hours of upper-division courses in 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 4953 or 4955.

Note: HIST 4931, 4953, 4955, and 4995, 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.

MAJOR IN AMERICAN MILITARY HISTORY:

Thirty-two to thirty-six hours, including HIST 1001 and 1002 (6 credit hours); HIST 2101 and 2102, or HIST 1101 (3-6 credit hours); AFAS 2021 and 2022, or NASC 1022 (2-3 credit hours); HIST 3118 (3 credit hours); NASC 1161 or 1181 (3 credit hours); and any 5 of the following: HIST 3102, 3104, 3127, 3295, 3297, 4113, 4114, and 4298 (15 credit hours). HIST 4931, 4953, 4955 and 4995 may be used toward the upper-division HIST elective requirement, depending upon course content and approval of the department chair. A HIST major cannot be used as a second major with American Military History (AMMH).

▲HIST 1001. Growth of Western Civilization to 1715 3 sem. hrs.

An interpretative survey of Western Civilization from its beginnings to the Early Modern period. Offered every term.

▲HIST 1002. Growth of Western Civilization since 1715 3 sem. hrs.

An interpretative survey of Western Civilization from the Early Modern period to the contemporary era. Offered every term.

▲HIST 1101. Introduction to American History 3 sem. hrs.

A survey of American history from the colonial origins to the present.

HIST 1201. 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 1202. 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 1301. 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.

▲HIST 1401. 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 1501. 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 2101. Growth of the American Nation 1 3 sem. hrs.

The United States from colonial origins through the Civil War era, with consideration of political, cultural, and economic institutions and ideas.

HIST 2102. Growth of the American Nation 2 3 sem. hrs.

The United States from the Civil War era to the present, with consideration of political, cultural, and economic institutions and ideas.

HIST 3101. The British Atlantic World to 1713 3 sem. hrs.

The founding of colonies from Newfoundland to Virginia to Barbados, the transformation of landscapes, the struggle to create viable societies, the development of political and social institutions, relations between church and state, attempts to centralize control of the colonies, the Indian Wars, the rise of African slavery.

HIST 3102. Revolutionary America: 1707-1787 3 sem. hrs.

The development of an American nationality, international wars on the North American continent and in the West Indies, imperial reform, the Loyalist response, the causes and consequences of the War for Independence, the Articles of Confederation. *Prereq:* Soph. stndg.

HIST 3103. The New American Nation: 1787-1836 3 sem. hrs.

The reasons for the independence movement, the hopes and failures of the founding generation, the debates over the Constitution, the roots of an American empire, westward expansion, slavery, the rise of democracy, the formation of a distinctly American identity and culture, and the endless optimism of the young republic. *Prereq:* Soph. stndg.

HIST 3104. 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 3106. 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 3107. 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 3108. 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 3118. 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 3127. 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.*

HIST 3165. 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.*

GROUP II: EUROPE**HIST 3201. 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 1001 and HIST 1002 recommended.*

HIST 3205. The Byzantine Empire 3 sem. hrs. History of Byzantine Empire bridging from late antiquity to early modernity and stretching over three continents. Surveys imperial political, economic, social and cultural policies and developments and especially the empire's encounters and interactions with Slavs, Western Europeans, Persians, Berbers, Arabs, and Turks. *Prereq: Soph. standing; HIST 1001 recommended.*

HIST 3210. The Middle Ages 3 sem. hrs. This course examines the emergence and development of a distinct medieval society from a mixture of Roman, Christian, and Germanic cultures. Specific topics include political fragmentation and reorganization, the growth of towns and commerce, innovative religious movements, as well as later medieval upheavals. It also considers the sibling Mediterranean cultures of the Islamic world and the Byzantine Empire. *HIST 1001 and HIST 1002 recommended.*

HIST 3220. The Renaissance 3 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 1001 and HIST 1002 recommended.*

HIST 3225. War and Religion in Early Modern Europe: 1500-1650 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 1001 and HIST 1002 recommended.*

HIST 3230. 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 1001 and HIST 1002 recommended.*

HIST 3232. 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 1001 and HIST 1002 recommended.*

HIST 3235. 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 1001 and HIST 1002 recommended.*

HIST 3295. "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 1001 and HIST 1002 recommended.*

HIST 3297. 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 1001 and HIST 1002 recommended.*

GROUP III: ASIA, AFRICA AND LATIN AMERICA**HIST 3455. 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 1001 and HIST 1002 recommended.*

GROUP II: EUROPE**HIST 3751. 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 1001; same as PHIL 3751 and CRLS 3751. May be counted toward the core curriculum requirement in either Philosophy or Social-behavioral Science.*

GROUP I: UNITED STATES**HIST 4100. 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., HIST 2101 and HIST 2102.*

HIST 4101. Technology for Historians 3 sem. hrs.

An examination of technologies for researching, presenting and preserving historical materials. Students will learn to apply historic methods through digital media technologies. Topics will include systems and tools for: researching and collecting documents and materials; digitizing, editing and manipulating materials; presenting content to local and distant audiences; and preserving materials in appropriate formats. Digital imaging, multimedia and Web page creation, streaming technologies, presentations systems and CD/DVD production will be investigated. The unique capabilities of collaboration and distribution over high-speed networks (Internet2) will also be explored. Requirements include a final project on a historical topic that incorporates some or all of the technologies introduced in the course. This project will demonstrate mastery of content as well as technology. *Prereq: Jr. stndg.*

HIST 4113. American Foreign Relations 1 3 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 4114. 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 4115. The American West 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 4130. Religion and American Life 3 sem. hrs.

Survey the historical impact of religious belief and institutions on the intellectual, cultural, and public life of the United States. *Prereq: for HIST 4130: Soph. stndg.*

▲HIST 4135. African-American History 3 sem. hrs.

The role and response of African-Americans in American society. Emphasis on the problems of slavery, exclusion, accommodation, migration, urbanization, and currents of protest. *Prereq: Soph. stndg.*

HIST 4140. American Urban History 3 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 4145. A History of Women in America
3 sem. hrs.

Survey of the history of women and the variety of women's experiences in America from pre-European contact to the present. The historical construction of gender and the ways that diverse women have shaped and contested their various experiences as mothers, daughters, wives, and partners; as farmers and workers; as slaves and conquered peoples; as reformers and political activists; and as immigrants and citizens are analyzed. *Prereq: Soph. stndg.*

HIST 4150. Childhood in America 3 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 4160. Cultural and Intellectual History of the United States 3 sem. hrs.

A survey of American thought and culture from the first contacts between indigenous peoples and Europeans, through the development of the United States, to the present. Particular attention will be paid to those moments of intellectual and cultural conflict that illuminate and define the process by which a variety of Americans have shaped a distinct but malleable American culture.

Prereq: Soph. stndg.

HIST 4170. Constitutional History of the United States 3 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.

GROUP II: EUROPE

HIST 4212. 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. HIST 1001 and HIST 1002 recommended.

HIST 4213. 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 1001 and HIST 1002 recommended.*

HIST 4245. Women in Western Civilization
3 sem. hrs.

Survey of women's experiences in western civilization from prehistory to the present. Focusing primarily on Europe, the course analyzes the changing roles and responsibilities of women in the family, in the work force, and in the community, and highlights the impact of phenomena such as religion, science, technology, and democracy on the shifting perceptions and definitions of gender in western civilization. *Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.*

HIST 4247. Comparative Homefronts during the Second World War 3 sem. hrs.

Explores state policies, gender ideologies, daily realities and the role(s) of civilians, particularly women, on select home fronts of World War II. The conflict was a "watershed" in the use of violence aimed at civilians, who were targeted via air

raids, food blockades, deportation, rape and mass murder. Using comparative framework, the course examines Germany, Italy, France, the concentration camps, and the United States. *Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.*

HIST 4249. Intellectual History of Modern Europe 3 sem. hrs.

The lives and works of prominent European scientists, philosophers and artists from the Enlightenment to the present. *Prereq: Soph. stndg.*

HIST 4250. Tudor England 1485 to 1603
3 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 4251. War and Revolution in Britain: 1603-1715 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 1001 and HIST 1002 recommended.*

HIST 4252. Modern Britain 3 sem. hrs.

This course focuses on the democratization of Britain, the creation of the welfare state, and the erosion of Victorian Britain's commercial and political global primacy reflected in the disintegration of the British empire and fragmentation of the United Kingdom. *Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.*

HIST 4255. The British Empire 3 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 1001 and HIST 1002 recommended.*

HIST 4260. Modern Ireland 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 1001 and HIST 1002 recommended.*

HIST 4262. Modern France 3 sem. hrs.

France from the fall of Napoleon to the present, especially emphasizing the development of French democracy and the nation's enduring impact on world affairs. *Prereq: Soph. stndg.*

HIST 4264. Modern Germany 3 sem. hrs.

Survey of the major political, cultural, social and intellectual developments in modern Germany history since the Napoleonic period. Topics include nationalism, unification, the German (Wilhelmine) Empire, the Weimar Republic, the rise of the Nazi Party, the Third Reich, the two world wars, division, reunification and Germany's post-reunification role in Europe. *Prereq: Soph. stndg.*

HIST 4270. Russia to 1861 3 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 1001 and HIST 1002 recommended.*

HIST 4271. 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 1001 and HIST 1002 recommended.*

HIST 4290. 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 1001 and HIST 1002 recommended.*

HIST 4298. 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.; HIST 1001 and HIST 1002 recommended.

GROUP III: ASIA, AFRICA AND LATIN AMERICA

HIST 4320. United States-Latin American Relations 3 sem. hrs.

Analyzes the symbiotic relationship between the United States and Latin America from 1776 to the present, focusing on the key themes of race, colonialism, resistance, transculturation, dependency, revolution, the drug trade and immigration. Students will examine how the United States' changing global status has affected its political, economic and cultural relationship with other countries in the Americas. *Prereq: Soph. stndg.; HIST 1101 and HIST 1301 recommended.*

HIST 4350. 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 1001 and HIST 1002 recommended.*

HIST 4355. 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 1001 and HIST 1002 recommended.*

HIST 4450. North Africa 3 sem. hrs.

North Africa from the 7th century to the present, emphasizing Islamic and European influences. *Prereq: Soph. stndg.; HIST 1001 and HIST 1002 recommended.*

HIST 4500. Modern Japan 3 sem. hrs.

Major events, people and debates in Japanese history from 1800 to the present. Includes examinations of the "margins" of Japanese history: the countryside, the common people, ethnic minorities, marginal identities, etc., in order to understand how individuals dealt with changes in Japan from its early modernity to the present day.

Prereq: Soph. stndg.

HIST 4550. Medieval East Asia 3 sem. hrs.
Examines the tremendous flourishing of Chinese and Japanese cultures between the 7th and 14th centuries and the influence Mongol conquests played on the diffusion of these cultures to the west.
Prereq: *Soph. stndg.*

HIST 4555. Modern China 3 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 4600. Comparative Twentieth Century Genocides 3 sem. hrs.
Examines the emergence, development, underlying causes and uses of genocide, ethnic cleansing and the other crimes against humanity in the twentieth century. Case studies include colonial genocides; the Armenian genocide; the Holocaust; the Cambodian genocide; the Rwandan genocide; and the ethnic cleansings in the former Yugoslavia. Responses to these crimes, denial and memory, justice and redress, and strategies of prevention and intervention will be explored. *Prereq:* *Soph. stndg.;* *HIST 1001 and HIST 1002 recommended.*

SPECIAL COURSES

HIST 4931. Topics in History 3 sem. hrs.
A lecture course on various areas and themes. The specific topics of 4931 courses will be designated in the *Schedule of Classes*.
Prereq: *Soph. stndg.*

HIST 4953. Readings 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 will be designated in the *Schedule of Classes*. Offered annually. *Prereq:* *Jr. stndg.*

HIST 4955. Undergraduate Seminar in History 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 4953.*

HIST 4986. Internship in Public and Applied History 3 sem. hrs.
Offers History majors, minors, and interdisciplinary minors in public history an opportunity to have a work experience outside of the classroom in such venues as archives, art museums, historical societies, and museums. Students must arrange the internship in consultation with the public history adviser and complete an internship agreement. Undergraduate students work 8-10 hours per week and graduate students work 10-12 hours per week during the term. Students complete a written assignment in conjunction with the work experience as part of the course requirements. Completion or concurrent enrollment in HIST 4100 is strongly recommended. S/U grade assessment.
Prereq: *Cons. of public history adviser.*

HIST 4995. Independent Study in History 1-3 sem. hrs.
Prereq: *Jr. stndg., cons. of instr., and cons. of dept. ch.*

HIST 4996. Senior Experience in History 3 sem. hrs.
The Senior Experience requirement applies to all students who are seeking a BA degree in the

Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq:* *Sr. stndg.*

HIST 4999. Senior Thesis 3 sem. hrs.
Offered annually.
Prereq: *3.500 MU GPA and cons. of dept. ch.*

MATHEMATICS, STATISTICS AND COMPUTER SCIENCE (MATH AND COSC)

Chairperson and Professor: A. Clough
Assistant Chairperson and Adjunct Instructor: Many
Professor: Bankston, Bansal, Braunschweiger (*Emeritus*), Hamedani, Hanneken (*Emeritus*), Harris, Jones, Krenz, Lawrence (*Emeritus*), Merrill, Moyer, Pastijn, Ruitenburg
Associate Professor: Ahamed, Brookshear (*Emeritus*), Byleen, Factor, Slattery, Struble
Assistant Professor: Brylow, Ge, Madiraju, Magiera, Sanders, Scott, Spiller

Research Associate Professor: Tonellato
Adjunct Instructor: Jolley, Miller, Schwerm, Utzerath
Lecturer: Boelk, Chmielinski, Hughes, Ranganath, Walker

MAJOR IN MATHEMATICS:
Thirty-nine hours of mathematics courses, including MATH 1450, 1451, 2350, 2450, 3100; one of the following sequences: MATH 4120/4121, MATH 4200/4201, MATH 4200/4210; MATH 4200/4450, MATH 4420/4030, MATH 4500/4510, MATH 4670/4650, MATH 4700/4710; at least one additional course from each of the three groups listed below:

| | |
|----------------------------|--|
| Group 1 Pure Courses | 4120, 4121, 4200, 4201, 4210, 4320, 4420, 4450, 4630, 4650, 4670 |
| Group 2 Applied Courses | 3520, 4500, 4510, 4540, 4630, 4650, 4670 |
| Group 3 Statistics Courses | 4700, 4710, 4715, 4720, 4740, 4760, 4780 |

and six additional hours of upper division MATH courses. (Occasionally MSCS 4931 may be approved as a substitute within a student's program of study for an above listed course.) In addition, each student must complete COSC 1010.

Students enrolled in the College of Education must fulfill the requirements of a MATH major by following the program below.

Thirty-nine hours of mathematics courses, including MATH 1450, 1451, 2450, 2350, 3100; the sequence MATH 4420/4030; and the electives below:
Group 1 Pure MATH 4120
Group 2 Applied MATH 4630
Group 3 Statistics MATH 4720
Electives MATH 4670 or 4700, and MATH 4040
In addition each student must complete MATH 3030 and COSC 1010.

Note that MATH 3030 is required as part of the state certification program and must be completed before

student teaching. From the beginning of their work toward a degree, students should consult with both the department adviser for Mathematics Education and the Director of Teacher Education in the College of Education about the appropriate sequence of courses.

MINOR IN MATHEMATICS :

Twenty-four hours of mathematics courses, including MATH 1450, 1451, 2450, either 2350 or 2451, and at least nine additional hours of upper-division MATH courses.

To pursue Department of Public Instruction certification, College of Education students should follow the mathematics minor by selecting the following courses. Twenty-six hours of mathematics courses consisting of MATH 1450, 1451, 2350, 3100, 4040, 4120, 4420, and 4720. MATH 3030 must be completed before student teaching.

MAJOR IN COMPUTER SCIENCE :

Forty-one hours of computer science courses, including COSC 1010, 1020, 2100, 2200, 3100, 3250, 3410, 4997, 4998 and twelve additional hours of upper-division COSC courses. In addition, each student must complete MATH 1400, 2100, and three additional hours of upper-division MATH courses.

MINOR IN COMPUTER SCIENCE :

Twenty hours of computer science courses, including COSC 1010, 1020, 2100, 2200 and six additional hours of upper-division COSC courses. In addition, each student must complete MATH 2100.

MINOR IN SOFTWARE DEVELOPMENT :

Twenty hours of computer science courses, including COSC 1010, 1020, 2100, 4860 and six additional hours of upper-division COSC courses. In addition, each student must complete MATH 2100.

MAJOR IN COMPUTATIONAL MATHEMATICS :

Fifty hours of mathematics and computer science courses, including MATH 1450, 1451, 2350, 2450, 3100, 4630, 4760; either 4710 or 4720; COSC 1010, 1020, 2100, 2200; two of MATH 4200, 4500, 4510, 4650, 4700, 4740; and one of COSC 3250, 3410.

Mathematics Courses (MATH)

MATH 105. 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. *Prereq:* *Cons. of dept. ch.*

MATH 1100. 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 1101. Trigonometry and Analytic Geometry 3 sem. hrs.

A continuation of MATH 1100 covering precalculus mathematics including trigonometric functions and their properties, trigonometric identities and equations, applications of trigonometry, vectors, polar coordinates, exponential and logarithmic functions, and conic sections. Offered spring term.

Prereq: MATH 1100 or equivalent. Equivalent is one year of high school geometry and the equivalent of MATH 1100 in high school courses. Does not count toward the Math-Logic-Computer requirement in the Arts and Sciences College Curriculum.

▲MATH 1300. The Nature of Mathematics 3 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 every term.

Prereq: Two years of college preparatory mathematics.

▲MATH 1390. 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 1100 or equivalent. Equivalent is three years of college preparatory mathematics.

▲MATH 1400. 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 1100 or equivalent. Equivalent is three years of college preparatory mathematics.

MATH 1401. 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. *Prereq: MATH 1400.*

▲MATH 1410. 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 1100 or equiv. Equivalent is three years of college preparatory mathematics.

▲MATH 1450. 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 1101 or equiv. Equivalent is three to four years of college preparatory mathematics including topics listed in description of MATH 1101.

▲MATH 1451. Calculus 2 4 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 1450.

MATH 1455. Calculus 2 for Biomedical Engineers Techniques of Integration 4 sem. hrs.

Techniques of integration, including numerical methods. Infinite sequences and series, including Taylor Series. Analytic-Geometry including parametric equations, vectors and vector functions. The differential and integral calculus of functions of several variables. Restricted to students in BIEN. Offered spring term. *Prereq: MATH 1450.*

▲MATH 1700. 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. *Prereq: MATH 105 or equivalent. Equivalent is two years of college preparatory mathematics. May not be taken for credit by students who have received college credit for another probability or statistics course.*

▲MATH 2030. Problem Solving and Reasoning for Teachers 3 sem. hrs.

Mathematical content and processes for teachers. Mathematical techniques and ways of thinking are used to enhance mathematical power. Multiple ways of organizing and analyzing data, reasoning and communication skills, and multiple problem-solving strategies are used to solve nonroutine problems. In the process, elementary mathematical ideas are expanded and deepened. Restricted to students in the teacher preparation program. *Prereq: Two years of college preparatory mathematics.*

MATH 2031. Number Systems and Operations for Elementary Teachers 2 sem. hrs.

Mathematical content and processes for elementary teachers. Uses a problem solving approach. Integrates mathematics content with teaching methods and learning theory. In-depth study of whole and rational number systems including analyses of algorithms for addition, subtraction, multiplication, and division. Provides a framework for the meaningful teaching of place value, whole numbers, exponents, fractions, decimals, percents, ratios, proportions, probability, and data analysis. Restricted to students in the elementary teacher preparation program. *Prereq: EDUC 1964, which must be taken concurrently, and MATH 2030.*

MATH 2032. Algebra and Geometry for Teachers 2 sem. hrs.

Mathematical content and processes for teachers. Uses a problem solving approach. Integrates mathematics content with teaching methods and learning theory. In-depth study of the growth of algebraic and geometric reasoning. Provides a framework for the meaningful teaching of integers, patterns, algebraic expressions, functions, equations, graphs, spatial visualization, polygons and polyhedra, similarity and congruence, conjectures and deductions in geometry, and mathematical modeling. Restricted to students in the teacher preparation program. *Prereq: EDUC 2964, which must be taken concurrently, and MATH 2031.*

MATH 2100. Discrete Mathematics 3 sem. hrs. Introduction to set theory, logic, mathematics induction, finite state machines, graph theory, modular arithmetic, Boolean algebra, and coding theory. Applications in computer science are emphasized. Offered spring term. Two years of college preparatory mathematics required. May not be taken for credit by those who have completed MATH 2350.

MATH 2105. Discrete Mathematics for Engineers 3 sem. hrs.

Counting methods. The algebra of sequences, generating functions, and recurrences. The algebra of finite state machines and semigroups. Relations, graphs, posets, and trees. Path and flow problems. Offered spring term.

Prereq: MATH 2451. Credit will not be given for both MATH 2105 and either MATH 2100 or MATH 2350.

MATH 2350. Foundations of Mathematics 3 sem. hrs.

Introduction to set theory, logic, mathematical induction, graph theory, modular arithmetic, and higher mathematical thinking through proof and applications. Mathematical proof is emphasized. Offered every term. *Prereq: MATH 1400, MATH 1410 or MATH 1450.*

MATH 2450. 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 1451.

MATH 2451. Differential Equations 4 sem. hrs.

Methods and techniques applicable to first order, nth order, and systems of first order differential equations. Eigenvalues, eigenvectors, the Wronskian, Laplace transforms, linearization, and phase portraits. Offered every term.

Prereq: MATH 2450.

MATH 2455. 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 2450 or MATH 1455.*

MATH 3030. 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 2227 and either MATH 4120 or MATH 4420, which may be taken concurrently. Admission to the College of Education.

MATH 3100. Linear Algebra and Matrix Theory 3 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 2451 or MATH 2350.*

MATH 3520. 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. *Prereq: MATH 2450.*

MATH 3977. 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. S/U grade assessment. Offered fall term.
Prereq: Cons. of instr.

MATH 4030. Concepts in Geometry and Calculus from an Advanced Standpoint 3 sem. hrs.

Topics chosen primarily from geometry and calculus, taught from an advanced standpoint to enrich and deepen the student's understanding. Emphasis on alternative approaches, generalizations, historical contexts and connections with prior mathematical studies. Offered alternate spring terms.
Prereq: MATH 4420 and six additional hrs. of upper division MATH courses and cons. of dept. ch.

MATH 4040. Concepts in High School Algebra and Number Theory from an Advanced Standpoint 3 sem. hrs.

Topics closely related to the high school mathematics curriculum, chosen primarily from algebra and number theory, taught from an advanced standpoint to enrich and deepen the student's understanding. Emphasis on alternative approaches, generalizations, historical contexts and connections with prior mathematical studies. Offered alternate spring terms. Course is offered for graduate credit only to students enrolled in SPSST.
Prereq: MATH 4120 and cons. of dept. ch.

MATH 4120. 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 2350.

MATH 4121. Abstract Algebra 2 3 sem. hrs.

A continuation of MATH 4120 with emphasis on groups, rings, fields, and modules.
Prereq: MATH 4120.

MATH 4200. Intermediate Analysis 1

3 sem. hrs.
Limits and continuity, differentiability, Riemann integration. Topology of N-dimensional spaces. Offered alternate fall terms.
Prereq: MATH 2451 or MATH 3100.

MATH 4201. Intermediate Analysis 2

3 sem. hrs.
Transformations of N-spaces, line and surface integrals, sequences and series, uniform convergence.
Prereq: MATH 4200.

MATH 4210. Complex Variables 3 sem. hrs.

Complex numbers, analytic functions, differentiation, series expansion, line integrals, singularities, and residues. Offered alternate spring terms.
Prereq: MATH 2450.

MATH 4300. 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. stdg. or cons. of dept. ch.

MATH 4320. Theory of Numbers 3 sem. hrs.
Integers, unique factorization theorems, arithmetic functions, theory of congruences, quadratic residues, partition theory. Offered alternate spring terms.
Prereq: MATH 2350.

MATH 4420. Foundations of Geometry

3 sem. hrs.
Modern postulational development of Euclidean and non-Euclidean geometries. Offered fall term.
Prereq: MATH 2350.

MATH 4430. Geometric Transformations

3 sem. hrs.
Overview of transformation geometry including a study of congruence, similarity, affine, projective and topological transformation groups.
Prereq: MATH 2350.

MATH 4450. Topology 3 sem. hrs.

Topological spaces, mappings, metric spaces, product and quotient spaces. Separation axioms, compactness, local compactness and connectedness. Offered alternate spring terms.
Prereq: MATH 2350.

MATH 4500. Theory of Differential Equations

3 sem. hrs.
Existence and uniqueness theorems, linear and non-linear systems, numerical techniques, stability. Offered alternate fall terms.
Prereq: MATH 2451 or MATH 3100.

MATH 4510. 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.
Prereq: MATH 2451 or MATH 3100.

MATH 4540. 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 2200, COSC 2100 and either MATH 1400 or MATH 1451; or COSC 2010 and MATH 1451; or COEN 1610 and MATH 1451.

MATH 4630. Mathematical Modeling and Analysis 3 sem. hrs.

Construction and analysis of mathematical models from biological, behavioral, and physical sciences. Offered spring term.
Prereq: MATH 2451 or MATH 3100.

MATH 4650. 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.
Prereq: MATH 2451 or MATH 3100.

MATH 4670. Applied Combinatorial Mathematics 3 sem. hrs.

Permutations and combinations, recurrence relations, inclusion and exclusion, Polya's theory of counting, graph theory, transport networks, matching theory. *Prereq: MATH 2100 or MATH 2350.*

MATH 4700. Theory of Probability 3 sem. hrs.

Random variables, distributions, moment generating functions of random variables, various derived prob-

abilistic models and applications. Recommended, with MATH 4710, for students in mathematics, engineering, and the physical and behavioral sciences. Offered fall term. *Prereq: MATH 2450.*

MATH 4710. Mathematical Statistics

3 sem. hrs.
Sampling theory and distributions, estimation and hypothesis testing, regression, correlation, analysis of variance, non-parametric methods, Bayesian statistics. Offered alternate spring terms.
Prereq: MATH 4700.

MATH 4715. 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, multi-variate and stepwise techniques, error analysis. Course will make extensive use of statistical computer packages.
Prereq: MATH 4710 or MATH 4720.

MATH 4720. Statistical Methods 3 sem. hrs.

Probability, discrete and continuous distributions. Treatment of data, point and interval estimation, hypothesis testing. Large and small sample method, regression, non-parametric methods. An introductory applications-oriented course recommended for students who wish to acquire a basic understanding of statistical methods. *Prereq: MATH 1400, MATH 1410 or MATH 1450. May not be taken for credit by those who have completed MATH 4710.*

MATH 4740. Biostatistical Methods and Models 3 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 be given for both MATH 4720 and MATH 4740. Offered fall term. *Prereq: One semester of calculus.*

MATH 4760. 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 alternate spring terms. *Prereq: MATH 2450 or equiv.*

MATH 4780. 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 alternate spring terms.
Prereq: MATH 4720 or equiv.

MATH 4931. Topics in Mathematics or Statistics 1-3 sem. hrs.

Topics selected from one of the various branches of mathematics or statistics. Specific topics to be announced in the *Schedule of Classes*.

MATH 4953. Undergraduate Seminar

3 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 *Schedule of Classes*.
Prereq: Cons. of dept. ch.

MATH 4987. 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 4988 during the following term. Offered every term. Fee.
Prereq: Jr. stndg. SNC/UNC grade assessment.

MATH 4988. 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 4987.

MATH 4995. Independent Study in Mathematics 1-3 sem. hrs. Directed reading and/or research in Mathematics under a member of the staff.
Prereq: Cons. of dept. ch.

MATH 4999. 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 1000. 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 and Sciences core curriculum.

COSC 1010. Introduction to Computer Programming 4 sem. hrs. Introduction to abstraction, algorithmic thinking, simulation and testing for computer-based problem solving. Students will learn a high-level programming language and use tools developed by computer scientists and software engineers to solve problems. No prior programming experience is assumed. 3 hrs. lecture, 2 hrs. lab. Two years of college preparatory mathematics required.

COSC 1020. Object-Oriented Software Design 4 sem. hrs. Software development using Java. Topics include classes and interfaces as design patterns, the Java API, current object-oriented design methodologies, an introduction to the Internet and the development of Web applications. Projects involve the development of graphical interfaces and net-centric applications. 3 hrs. lecture, 2 hrs. lab. Offered every term.
Prereq: COSC 1010 or advanced placement.

COSC 2010. Data Structures for Engineers 3 sem. hrs. The study of popular data structures such as lists, stacks, queues and trees and their related algo-

ri thms. *Prereq: COSC 1010 or EECE 1610; knowledge of JAVA. Credit will not be given for both COSC 2010 and COSC 2100.*

COSC 2100. Data Structures and Algorithms 1 3 sem. hrs. Introduction to algorithm analysis and complexity theory presented in the context of data structures and the algorithms used to manipulate them. Includes introduction to traditional data structures, indexing, hashing, and time and space complexity. Offered fall term.
Prereq: COSC 1020 and MATH 2100.

COSC 2200. Hardware Systems 3 sem. hrs. Introduction to computer architecture and machine level programming. Topics include combinational and sequential binary logic, assembly languages, memory management, caching, pipelining, bus architecture, interrupts and I/O processing. Course may consist of a 3 hr. lecture or a 2 hr. lecture and 2 hr. lab. *Prereq: COSC 1020 and MATH 2100.*

COSC 3100. Data Structures and Algorithms 2 3 sem. hrs. Types of algorithms such as divide-and-conquer, greedy, probabilistic, graph traversal, heuristic, and parallel algorithms. Computational complexity including time and space complexity, and the P=NP problem. Offered spring term.
Prereq: COSC 2100 or COSC 2010.

COSC 3250. Operating Systems 3 sem. hrs. Fundamental concepts of operating systems including process control and scheduling, synchronization, memory management, file systems, device control, and the boot process. Course may consist of a 3 hr. lecture or a 2 hr. lecture and 2 hr. lab.
Prereq: COSC 2200 and COSC 2100 or COSC 2010.

COSC 3300. Networks and Internets 3 sem. hrs. Fundamentals of popular network technologies, internet organization and underlying protocols, domain administration, support of internet applications and distributed systems, domain and internet-wide security. Offered fall term.
Prereq: COSC 2100 or COSC 2010.

COSC 3410. Programming Languages 3 sem. hrs. A comparative study of programming paradigms and representative programming languages. Topics include binding times, control of data, control of execution, execution environment, the role of language as an organizational tool, modularization, and the concept and significance of universal programming languages. Offered fall term.
Prereq: COSC 2100 or COSC 2010.

COSC 3550. Programming Computer Games 3 sem. hrs. Algorithms, data structures, and tricks used to program arcade-style video games written in Java. Topics include 2D animation, sprites, interaction, music/sound, 3D worlds, network games. Underlying issues include graphical user interfaces, multi-threaded applications, real-time concerns, use of APIs, and client-server applications. Offered annually.
Prereq: COSC 2200 and COSC 2100 or COSC 2010.

COSC 3810. Software Design and Analysis 3 sem. hrs. Issues involved in the design and implementation of large software systems. Software lifecycle, software design methodologies, human factors analysis, project management. *Prereq: COSC 2100 or COSC 2010.*

COSC 3977. Problem Solving: Programming 1 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. S/U grade assessment. *Prereq: Cons. of instr.*

COSC 4110. Formal Languages and Computability 3 sem. hrs. Regular languages, finite state automata, and lexical analysis; context free languages, push-down automata, parsing, and the rudiments of LL and LR parsers; general phrase-structure languages, Turing machines, the Church-Turing thesis, the halting problem, universal programming languages. Offered alternate years. *Prereq: COSC 3100.*

COSC 4400. Compiler Construction 3 sem. hrs. Lexical analysis, parsing, code generation, and optimization. Includes theoretical foundations and the practical concerns of implementation. Offered alternate years. *Prereq: COSC 2200 and COSC 3410; or COSC 3410 and COSC 2010.*

COSC 4600. Fundamentals of Artificial Intelligence 3 sem. hrs. An introduction to the broad field of artificial intelligence. Topics include problem solving by searching, knowledge representation, reasoning, planning, decision making, learning, perception, and language processing. Offered alternate fall terms.
Prereq: COSC 2010 or COSC 2100; and COSC 2200.

COSC 4610. Data Mining 3 sem. hrs. Techniques for extracting and evaluating patterns from large databases. Introduction to knowledge discovery process. Fundamental tasks including classification, prediction, clustering, association analysis, summarization, and discrimination. Basic techniques including decision trees, neural networks, statistics, partitional clustering, and hierarchical clustering. Offered alternate spring terms.
Prereq: COSC 4600 or COEN 4850; and COSC 4800.

COSC 4800. Principles of Database Systems 3 sem. hrs. Topics include database concepts and architecture, data modeling, formal query languages such as relational algebra, commercial query language SQL, database access from application programs and a brief examination of advanced concepts including transactions, distributed databases, security and XML. *Prereq: COSC 2010 or COSC 2100.*

COSC 4860. Component-Based Software Construction 3 sem. hrs. Introduction to software components in the context of the object-oriented paradigm. Component development, component selection and adaptation/customization, component deployment and assembly/integration, and system architecture. Industry standards such as JavaBeans, CORBA Component Model, and Microsoft COM/DOM/COM+. Offered fall term.
Prereq: COSC 1020 or COSC 2010; and MATH 2100.

COSC 4931. Topics in Computer Science 1-3 sem. hrs. Topics selected from one of the various branches of computer science. Specific topics to be announced in the *Schedule of Classes*.

COSC 4953. Undergraduate Seminar in Computer Science 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 *Schedule of Classes*.
Prereq: Cons. of dept. ch.

COSC 4987. 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 4988 during the following term. Offered every term. Fee.
Prereq: Jr. stndg. SNC/UNC grade assessment.

COSC 4988. 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 4987.*

COSC 4995. Independent Study in Computer Science 1-3 sem. hrs.

Directed reading and/or research in computer science under a member of the staff.
Prereq: Cons. of dept. ch.

COSC 4997. Principles of Design 3 sem. hrs. Fundamentals of structured software design and development applied in a multi-disciplinary, team-based project environment. Teams create project definition and specification based on user needs. Activities focus on software lifecycle, design methodologies, human factor analysis, teamwork, customer interaction, project management and effective communication. Work culminates in a technically and economically viable proposal for future development. (This course specifies and designs a project for implementation in COSC 4998.) *Prereq: MATH 1400 or 1451; MATH 2100 or 2350; COSC 3250, 3100; and Sr. stndg.*

COSC 4998. Senior Design Project 3 sem. hrs. Given initial design and project specification, focus is on detailed software design, prototyping and testing of design concepts in a realistic multi-disciplinary team environment. "Team-based activities" result in implementation of a software system in support of a project and culminate in a working prototype satisfying user needs and software specification. Final report documents prototype details and verifies resulting project meets needs and specifications. (This course implements project specified and designed in COSC 4997.)
Prereq: MATH 1400 or 1451; MATH 2100 or 2350; COSC 3250, 3100; and Sr. stndg.

COSC 4999. 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 Associate Professor: South
Assistant Chairperson and
Associate Professor: Foster
Professor: Anderson (Emeritus), Ashmore (Emeritus), Carter, J. Jones, Kainz (Emeritus), Tallon, Taylor, Teske (Emeritus), Vandeveld, Wreen
Associate Professor: Gibson, Goldin, Harrison, Ibáñez-Noé, Krettek, Luft, Naus, Nolan, Peressini, Prendergast (Emeritus), Rice (Emeritus), Rousseau (Emerita), C. Schmidt, Snow, Starr, Twetten
Assistant Professor: Adams, Crockett, Flaherty, Monahan, Tobin, Trivigno
Adjunct Associate Professor: Stohrer

MAJOR IN PHILOSOPHY:

All Majors take:
Thirty hours, including either PHIL 1000 or 4000 (4000 recommended), PHIL 1001, PHIL 2310, and PHIL 3410 or 3450, and three courses in an area of concentration:
History of Philosophy: 3610, 3620, 3625, 3630, 3640, 3650, 3660, 3665, 3670, (one course must be 3610 or 3650).
Social, Political and Legal Philosophy: 3660, 3710, 3730, 3740, 3750, 3751, 3770, 3780.
Ethics and Values: 3350, 3370, 3380, 3780, 4320, 4330, 4335.
Plus three philosophy electives.

MINOR IN PHILOSOPHY:

Twenty-one hours, including either PHIL 1000 or 4000, 1001, 2310, and 3410 or 3450.

INTRODUCTORY COURSES

PHIL 1000. 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. The course will study topics such as: terms and propositions, definition, opposition, induction and deduction, reasoning and argumentation, fallacies in argument. Offered every term. Fr stndg recommended.

▲PHIL 1001. 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 2310. 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: Soph. stndg. and PHIL 1001.

UPPER DIVISION COURSES

PHIL 3350. 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. *Prereq: Jr. stndg. and PHIL 1001.*

PHIL 3370. 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. *Prereq: Soph. stndg. and PHIL 1001.*

▲PHIL 3380. 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. *Prereq: Jr. stndg. and PHIL 1001.*

PHIL 3410. 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 1001.

PHIL 3420. 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 1001.

PHIL 3450. 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 1001.*

PHIL 3460. 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).
Prereq: Jr. stndg. and PHIL 1001.

PHIL 3610. 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 1001; first semester sophomore standing.*

PHIL 3620. 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 1001.

PHIL 3625. 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 1001.*

PHIL 3630. 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 1001.*

PHIL 3640. 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 1001.*

PHIL 3650. 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 1001.*

PHIL 3660. 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. *Prereq: Jr. stndg. and PHIL 1001.*

PHIL 3665. Existentialism 3 sem. hrs.

Writings of major 19th and 20th century Existentialists, including several of the following: Kierkegaard, Nietzsche, Heidegger, Jaspers, Marcel, and Sartre. *Prereq: Jr. stndg. and PHIL 1001.*

PHIL 3670. 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. *Prereq: Jr. stndg. and PHIL 1001.*

PHIL 3710. 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 1001.*

PHIL 3730. 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 1001.*

PHIL 3740. 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. *Prereq: Jr. stndg. and PHIL 1001.*

PHIL 3750. 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 1001.*

PHIL 3751. 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 1001. Same as HIST 3751 and CRLS 3751. May be counted toward the core curriculum requirement in either Philosophy or Social-behavioral Science.*

PHIL 3770. Feminist Philosophy 3 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. *Prereq: Jr. stndg. and PHIL 1001.*

▲PHIL 3780. Africana Philosophy 3 sem. hrs.

Introduction to some of the central philosophical issues and figures from the African Diaspora. May be organized topically or historically to acquaint students with the contributions of Africana thinkers to philosophy. Perennial issues in philosophy of human nature and social/political philosophy will be approached from an Africana perspective, and may include any of the following topics: the ontological status of the human race, the nature of racism, the relation between race and personal identity, contemporary race relations, global feminism, the existence of a distinctly "African" philosophy, etc. The course may include such authors as Zera Yacob, Kwame Appiah, WEB DuBois, Marcus Garvey, Frantz Fanon, Paget Henry, Sylvia Wynter, Angela Davis, Charles Mills, and Lewis Gordon. *Prereq: Jr. stndg. and PHIL 1001.*

PHIL 4000. 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. May not be taken by Engineering students to fulfill Philosophy requirement.

PHIL 4320. 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 2310.*

PHIL 4330. 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 2310.*

PHIL 4335. Medical Ethics 3 sem. hrs.

An introduction to medical ethics which examines several approaches to ethics within the inter-related contexts of medicine, health care and the law. Topics investigated may include: professional-patient relationships; institutional and social settings

of care delivery; informed consent, confidentiality, and truth-telling; abortion; critically ill neonates; death and dying; mental illness; human experimentation; resource allocation; and justice and health care. Case studies may be selected in light of both student's pre-professional training and personal interests. Offered every term.

Prereq: Jr. stndg. and PHIL 2310.

PHIL 4336. Applied Ethics for the Health Sciences 1 sem. hr.

An introduction to issues in professional ethics for students in the College of Health Sciences. Course is designed to provide a bridge to ethical topics covered in professional phase of study. Topics include: dignity of life, codes of medical ethics; the nature of the patient-medical provider relationship; confidentiality, the determination of patient competence; critical patient care, and justice in health care. Offered every term. *Prereq: Enrolled in Health Sciences, Jr. stndg., and PHIL 2310.*

PHIL 4470. 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. *Prereq: Jr. stndg., PHIL 1001, and two semesters of science.*

PHIL 4510. 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. *Prereq: Jr. stndg. and PHIL 1001.*

PHIL 4520. 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. *Prereq: Jr. stndg. and PHIL 1001.*

PHIL 4530. Philosophy of History 3 sem. hrs.

Meaning of history. Relation to philosophy and other disciplines. Possibility of a philosophy and theology of history. *Prereq: Jr. stndg. and PHIL 1001.*

PHIL 4540. 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 4540. *Prereq: Jr. stndg. and PHIL 1001.*

PHIL 4931. Topics in Philosophy 3 sem. hrs.

Prereq: Jr. stndg. and PHIL 1001.

PHIL 4953. 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 *Schedule of Classes*.

Prereq: Jr. stndg., PHIL 1001, and cons. of instr.

PHIL 4995. Independent Study in Philosophy

1-3 sem. hrs.

Offered every term.

*Prereq: Jr. stndg., PHIL 1001, and cons. of dept. ch.***PHIL 4996. Senior Experience in Philosophy**

3 sem. hrs.

The Senior Experience requirement applies to all students who are seeking a B.A. degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq: Sr. stndg., enrolled in the Klingler College of Arts and Sciences.*

PHIL 4999. 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: Brown**Professor: Burch, Karkheck, Matthys, K. Mendelson**(Emeritus), Associate Professor: Collins**Assistant Professor: Kunz, Politano, Stockdale**Research Associate Professor: Sorbjan**Lecturer: Buxton, Joseph, Korb**Laboratory Supervisor: Vigil***MAJOR IN PHYSICS:**

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 1013, 1014 (or 1001, 1002, or 1003, 1004), 2004, 2005, 2055, 3011, 4031; plus eight additional hours in upper division physics courses (30 hours); MATH 1450, 1451, 2450, 2451 (16 hours); and CHEM 1001 and 1002 (8 hours).

MINOR IN PHYSICS:

Twenty hours, including PHYS 1001 and 1002, or PHYS 1003 and 1004, or PHYS 1013 and 1014.

MINOR IN ASTRONOMY:

The Astronomy Minor is intended for students who are interested in learning about modern astronomy and astrophysics.

For non-physics majors, the minor requires one of the introductory physics sequences (PHYS 1013, 1014; PHYS 1003, 1004; or PHYS 1001, 1002) and PHYS 1008, 2004, 3021 and 3022 for a total of 20 credit hours. Students who complete PHYS 1001, 1002 must also take the math requisites for PHYS 1003, 1004 (MATH 1450 and 1451) in order to meet the mathematics level of PHYS 3021 and PHYS 3022.

For physics majors, the minor requires PHYS 1008, 3021, 3022, and 4931, taken under the guidance of one of our astronomy/astrophysics faculty and the topic being in the realm of astronomy or astrophysics. Note that this PHYS 4931 course is then used for the astronomy minor requirement and may not then be used for a physics major elective course requirement. The astronomy minor for a physics major requires a total of 12 credit hours beyond the physics major requirements.

MINOR IN BIOPHYSICS:

Biophysics is concerned with the application of the concepts and methods of physics to the solution of biological problems and to the understanding of biological processes. Students who complete the Biophysics minor achieve a grasp of physics as it relates to solving biological problems, a general understanding of the nature of biological problems and of proteins and cell membranes in particular, and of several techniques based on physics principles that are used in biological investigations.

The minor requires one year each of introductory biology, chemistry and physics. Introduction to organic chemistry (CHEM 2111/2112 or 2113/2114 or BISC 2050). Differential and integral calculus (MATH 1410 or MATH 1450/1451). PHYS 4046 (or equivalent by consent of Physics Department); and PHYS 4065. PHYS 3953 and PHYS 3995 (at least one credit each, minimum of three credits total).

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 3056, 4012, 4024, 4032, 4057, and 4062 (for a total of 38 hours in physics), MATH 4210 (for a total of 19 hours in mathematics), and either three additional hours in upper division mathematics, or PHYS 4048.

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 1001, 1002, 2001, and CHEM 2113, 2114. The physics in medicine concentration, which is also recommended for students interested in biomedical research, consists of the common physics core plus BIOL 1001, 1002, 2001, CHEM 2113, 2114 (for a total of 16 hours in chemistry), MATH 4720 (for a total of 19 hours in mathematics), and PHYS 3953. The physics electives should include PHYS 4012 and 4032.

The computational physics concentration serves to develop competence in using the computer as a scientific tool. It consists of the common physics core (that includes 16 hours of mathematics) plus MATH 3100; COSC 1010, 1020, 2100, 2200, and two additional upper level COSC courses (for a total of 39 hours of mathematics and computer science). One of the physics electives should be PHYS 4049. The mathematical physics concentration develops the mathematical aspects of physics. It consists of the common physics core (that includes 16 hours of mathematics) plus MATH 3100, 4120, and 4210 (for a total of 25 hours of mathematics). Two of the physics electives should be PHYS 4012 and PHYS 4062. Students pursuing the computational physics or mathematical physics concentrations may request from the physics department a waiver of the CHEM 1001, 1002 requirements, to substitute additional COSC or MATH courses.

Suggested course sequences for these concentrations are available from the physics department.

▲PHYS 1001. 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 1002. General Physics 2 4 sem. hrs.

Continuation of PHYS 1001. 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 1001.*

▲PHYS 1003. 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 1450 should be taken concurrently or previously.

▲PHYS 1004. General Physics with Introductory Calculus 2 4 sem. hrs.

A continuation of PHYS 1003. 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 1450 and PHYS 3; students may either take MATH 1451 or MATH 1455 concurrently or must have taken MATH 1451 or MATH 1455 previously.*

PHYS 1005. Perspectives in Physical Sciences 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. This course satisfies the Arts and Sciences College Curriculum Natural Science requirement.

▲PHYS 1007. 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 and Sciences College Curriculum Natural Science requirement.

▲PHYS 1008. Astronomy and Space Physics

3-4 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 1009. Earth and Environmental**Physics** 3-4 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 1013. 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 1450, which may be taken concurrently. A command of high school algebra, geometry, trigonometry is assumed. Requires the use of introductory calculus. Students cannot receive credit for both PHYS 1003 and PHYS 1013.*

▲PHYS 1014. Classical and Modern Physics with Calculus 2 4 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 1450, MATH 1451 or MATH 1455 which may be taken concurrently, and PHYS 1013. Students cannot receive credit for both PHYS 1004 and PHYS 1014.*

PHYS 1018. 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. SNC/UNC grade assessment.

PHYS 1020. Physics Laboratory Only 1 sem. hr. *Prereq: Cons. of dept. ch.***PHYS 1030. Physics Lecture Only** 1-6 sem. hrs. *Prereq: Cons. of dept. ch.***PHYS 2004. 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 2450 and PHYS 1002, which may be taken concurrently; or MATH 2450 and PHYS 1004, which may be taken concurrently.*

PHYS 2005. 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 2450, which may be taken concurrently, and PHYS 1002; or MATH 2450, which may be taken concurrently, and PHYS 1004.

PHYS 2055. 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 1004.*

PHYS 3011. 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 2451 and PHYS 1002; or MATH 2451 and PHYS 1004.*

PHYS 3021. Introduction to Theoretical Astrophysics 3 sem. hrs.

Introduction to astrophysical problems, with emphasis on underlying physical principles; includes the nature of stars, equations of state, stellar energy generations, stellar structure and evolution, astrophysical neutrinos, binary stars, white dwarfs, neutron stars and pulsars and novae and supernovae. This course does not count towards the physics major. *Prereq: PHYS 1013 and PHYS 1014 or PHYS 1003 and PHYS 1004 or PHYS 1001 and PHYS 1002 and cons. of instr.*

PHYS 3022. Introduction to Observational Astronomy 3 sem. hrs.

Nature of the Milky Way galaxy from an observer's perspective: stellar statistics and distributions, stellar populations, spiral structure, the nucleus and halo. Nature of ordinary galaxies, galaxies in our Local Group, structure of voids and superclusters. Nature of peculiar objects: Seyfert galaxies, starburst galaxies, and quasars. Elementary aspects of physical cosmology. Introduction to techniques used in modern optical and radio astronomy with emphasis on the physical and mathematical understanding of the detection of electromagnetic radiation. *Prereq: PHYS 1013 and PHYS 1014 or PHYS 1003 and PHYS 1004 or (PHYS 1001 and PHYS 1002 and cons. of instr.) and PHYS 2004 and PHYS 3021.*

PHYS 3056. Contemporary Physics Lab 1 2 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 2055.*

PHYS 3953. 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. stdg. May be taken more than once for credit. This course may not be used*

to satisfy the 30 cr. hr. minimum requirements for a bachelor's degree in physics.

PHYS 3995. Undergraduate Research in Physics 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. stdg. and cons. of dept. ch.; cons. of a regular physics faculty member.*

PHYS 4012. 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 2451 and PHYS 2004.*

PHYS 4024. 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 1451 and PHYS 1002; or MATH 1451 and PHYS 1004.*

PHYS 4031. 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 2450 and PHYS 1002; or MATH 2450 and PHYS 1004.*

PHYS 4032. 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 4031.*

PHYS 4046. The Physical Basis of the Biological Environment 3 sem. hrs.

The molecular processes of life occur in a complex aqueous environment. Biological molecules and their environments are governed by the principles of physics. This course goes beyond introductory physics and chemistry to present the mechanics of non-rigid bodies, the theory of multipolar electric and magnetic fields, and thermal and quantum physics which are brought to bear on interpretation of the optical spectra and calorimetric analysis of complex molecules and structures. This course may not be used to satisfy the 30 cr. hr. minimum requirements for a bachelor's degree in physics. *Prereq: Introductory physics and chemistry, MATH 1410 or MATH 1451.*

PHYS 4048. 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.
Prereq: MATH 2451, PHYS 1003, and PHYS 1004.

PHYS 4049. 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.
Prereq: PHYS 3011 and PHYS 4031; or EECE 3110 and PHYS 3011; or cons. of instr.

PHYS 4057. Contemporary Physics Lab 2 2 sem. hrs.

Continuation of the experiments in PHYS 3056. Measurement and propagation of uncertainty, curve fitting, automated data collection and experiment control. Offered spring term. 1 hr. lec., 3 hrs. lab.
Prereq: PHYS 3056.

PHYS 4062. 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 2450 and PHYS 2005.

PHYS 4065. Introduction to Molecular Biophysics 3 sem. hrs.

An introduction to the field of biological physics which develops the science and illustrates the applications of the techniques of X-ray diffraction and spin resonance to problems of biological interest: protein structural dynamics, ion channels, and transport through cell membranes.
Prereq: PHYS 2004 and PHYS 4031, or PHYS 4046.

PHYS 4071. 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.
Prereq: PHYS 4012 and PHYS 4031.

PHYS 4072. 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. *Prereq: PHYS 4012.*

PHYS 4075. 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.
Prereq: PHYS 2005 and PHYS 4012.

PHYS 4931. Topics 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 require-

ments for a bachelor of science in physics.

Prereq: Cons. of dept. ch.

PHYS 4953. 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. *Prereq: Cons. of dept. ch.*

PHYS 4995. Independent Study in Physics 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. *Prereq: Cons. of dept. ch.*

PHYS 4999. 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 cons. of dept. ch.; cons. of a regular physics faculty member.*

POLITICAL SCIENCE (POSC)

Chairperson and Professor: LeBlanc

Assistant Chairperson and Associate

Professor: Barrington

Professor: Boles, Dobbs, Fleet, Friman, McCormick, Rhodes (Emeritus), Swank, Thomas (Emeritus), Wolfe (Emeritus)

Associate Professor: McAdams

Assistant Professor: Azari, Drope, Hanley, Young

Adjunct Professor of American Government:

Director, Marquette University Les Aspin Center for

Government: O'Brien

Visiting Assistant Professor: Giaimo, Hoffman,

Janairo

Visiting Instructor: Armstrong, Shelledy, Kazmierczak

MAJOR IN POLITICAL SCIENCE:

Thirty-three hours of political science courses, in one of the four 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 are not counted for another major. Students may take up to six credits of Independent Study (POSC 4995) with department approval. Students majoring in political science will choose one of the following four options:

Track I: Politics

POSC 2201, 2401, 2601, and 2801, and seven upper division courses chosen from at least three of Groups I-IV. Recommended major courses: POSC 4191 and POSC 4986. Recommended cognate courses: ECON 2003, ECON 2004, ENGL 3210, MATH 1390, MATH 1400, and any foreign language 3001 or 3100.

Track II: Law and Politics

POSC 2201 and 2801, and either POSC 2401 or 2601; eight additional courses, including: POSC 4241 and 4251; POSC 4601; POSC 4376 or 4216; one other course from Group I; and one course from Group IV. Recommended major courses: POSC 4641, 4195, 4191 and 4986. Recommended cognate courses: ECON 2003, ECON 2004, MATH 1400, and ENGL 3210.

Track III: Global Politics

POSC 2201, 2401, and 2601; eight additional courses, including: POSC 4601 or 4611; POSC 4621 or 4631; one of: POSC 4641, 4701, 4711, 4721, 4731, 4741; one of: POSC 4201, 4211, 4216, 4376; and two courses from Group II. Recommended major courses: POSC 2801 and additional upper division courses from Groups II and III. Recommended cognate courses: a third year of foreign language, ECON 2003 and 2004.

Track IV: Business and Politics

POSC 2201; two of 2401, 2601 and 2801; eight additional courses, including: POSC 4321; two of POSC 4411, 4621, 4861; three of POSC 4216, 4231, 4281, 4331, 4341, 4406, 4641, 4851, 4986; two other POSC courses from any Group. *Required cognate courses:* ECON 2003 and 2004.

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 IN POLITICAL SCIENCE:

Eighteen hours, including POSC 2201, 2401, 2601 and 2801.

To pursue Department of Public Instruction certification, College of Education students should follow the political science minor by selecting the following courses. Twenty-four hours, including POSC 2201, 2401, 2601, and 2801, and 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.

DEPARTMENT OF PUBLIC INSTRUCTION CERTIFICATION

Students who want Department of Public Instruction Certification should note that persons holding Wisconsin's Broad Field Social Studies license will be qualified to teach political science if they complete nine semester hours in political science. Those who want certification with a political science major should complete thirty three hours of political science courses as specified in Track 1 above, with the exception that they should complete one upper division course in all four of the groups listed below. It is important that prospective teachers study carefully the College of Education section of this bulletin and consult with their Political Science Department advisor regarding university and state requirements (in addition to department requirements) for teacher certification.

INTRODUCTORY COURSES

▲ **POSC 2201. 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 2401. 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 2601. International Politics 3 sem. hrs. Patterns of interaction among nations and subnational and supranational entities. Cooperation and conflict. National interest, elements of power and war. Morality and human rights issues; economic, environmental, and resource issues in world politics. Recent developments and their impact. Offered every term.

POSC 2801. Justice and Power 3 sem. hrs. Explores the difference between justice and power with special reference to the authority of a higher law or principle of right; selections from the works of Thucydides, Plato, Machiavelli and others are read. Offered every term.

GROUP I: AMERICAN POLITICS

▲POSC 2201. 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 4201. 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 2201 or Jr. stndg.*

POSC 4211. 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 2201 or Jr. stndg.*

POSC 4213. 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 2201 or Jr. stndg.*

POSC 4216. 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 2201 or Jr. stndg.*

POSC 4221. 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 2201 or Jr. stndg.*

POSC 4231. Political Organizations 3 sem. hrs. Political parties, social movements, interest groups, and civic associations. How citizens organize themselves to participate in the political process. How democratic institutions resolve the tension between individual citizenship and collective action. Explores theories of mobilization, questions of influence, and explanations of success. *Prereq: POSC 2201; or Jr. stndg.*

POSC 4241. 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 3241. *Prereq: POSC 2201 or Jr. stndg.*

POSC 4251. 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 2201 or Jr. stndg.*

POSC 4261. 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. *Prereq: POSC 2201 or Jr. stndg.*

POSC 4271. 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. *Prereq: POSC 2201 or Jr. stndg.*

POSC 4281. 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 2201 or Jr. stndg.*

POSC 4291. 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 2201 or Jr. stndg.*

POSC 4321. Business and Politics 3 sem. hrs. Business participation in the policy making process. Business as a political actor. The regulation of business. Political influence of business. Constraints on business power. Business politics in historical perspective. *Prereq: POSC 2201; or Jr. stndg.*

POSC 4331. Politics and Regulation 3 sem. hrs. Economic and social regulation in America. Why we have regulations. Who is regulated. Who does the regulating. What the consequences of regulation are. Primary focus on business regulation and related topics. *Prereq: POSC 2201; or Jr. stndg.*

POSC 4341. Politics of American Capitalism 3 sem. hrs. Political economy of U.S. history. Individuals, firms, and business associations and their role in politics. Economic development and conflict as sources of political change. *Prereq: POSC 2201; or Jr. stndg.*

POSC 4361. 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 2201 or Jr. stndg.*

POSC 4366. 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. *Prereq: POSC 2201 or Jr. stndg.*

POSC 4371. Media and Politics in the United States 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. *Prereq: POSC 2201 or Jr. stndg.*

POSC 4376. American 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 2201 or Jr. stndg.*

GROUP II: COMPARATIVE POLITICS

▲POSC 2401. 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 4406. 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 environment. Offered annually. *Prereq: POSC 2401 or Jr. stndg.*

POSC 4411. Politics, Economics and Democracy 3 sem. hrs. The relationship between capitalism and democracy. The impact of economic factors on politics. The political consequences of the organization and power of private business. The impact of democratic politics and political institutions on economic actors and performance in capitalists democracies. *Prereq: POSC 2401; or Jr. stndg.*

POSC 4421. 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. *Prereq: POSC 2401 or Jr. stndg.*

POSC 4431. 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 2401 or Jr. stndg.*

POSC 4441. Designing Liberal Democracy 3 sem. hrs.

Exploring liberal democracy in theory practice, especially as concerns emerging democracies in the developing world. Includes consideration of the impact of economic development, ethnicity, language, Legacies of colonialism and/or indigenous political organization, internal democracy, corruption, strategic location and institutional design. Offered every two years. *Prereq: POSC 2401 or Jr. stndg.*

POSC 4501. 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 2401 or Jr. stndg.*

POSC 4511. 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 2401 or Jr. stndg.*

POSC 4521. 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 2401 or Jr. stndg.*

POSC 4531. Japanese and Korean Politics 3 sem. hrs. Political culture, unique patterns of modernization, and the contemporary political system in Japan and the two Koreas. *Prereq: POSC 2401 or Jr. stndg.*

POSC 4541. Latin American Politics 3 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 2401 or Jr. stndg.*

POSC 4551. 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 2401 or Jr. stndg.*

POSC 4561. Politics of the Developing World 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 2401 or Jr. stndg.*

GROUP III: INTERNATIONAL POLITICS

▲POSC 2601. International Politics 3 sem. hrs. Patterns of interaction among nations and subnational and supranational entities. Cooperation and conflict. National interest, elements of power and war. Morality and human rights issues; economic, environmental, and resource issues in world politics. Recent developments and their impact. Offered every term.

POSC 4601. 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 2601 or Jr. stndg.*

POSC 4611. 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 2601 or Jr. stndg.*

POSC 4621. Politics of the World Economy 3 sem. hrs.

Political and economic dynamics of the world economy; historical and theoretical roots; international trade and monetary relations and the impact of hegemony, interdependence, regimes, and domestic politics; trade, debt, multinational corporations, and the dynamics of dependency and development; communism, capitalism, and change. Offered annually. *Prereq: ECON 2004 and POSC 2601 or Jr. stndg.*

POSC 4631. World Conflict and Security 3 sem. hrs.

Classical and contemporary theories of war and peace; just and unjust wars; principles of strategic analysis, arms control, and security policy-making; the proliferation of nuclear, chemical, and biological weapons. The international trade in arms; nationalism, ethnic conflict, and wars of secession. Offered annually. *Prereq: POSC 2601 or Jr. stndg.*

POSC 4641. 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. *Prereq: POSC 2601 or Jr. stndg.*

POSC 4701. 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 2601 or Jr. stndg.*

POSC 4711. 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. *Prereq: POSC 2601 or Jr. stndg.*

POSC 4721. 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. *Prereq: POSC 2601 or Jr. stndg.*

POSC 4731. 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. *Prereq: POSC 2401 or POSC 2601 or Jr. stndg.*

POSC 4741. 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. Offered every two years. *Prereq: POSC 2601 or Jr. stndg.*

GROUP IV: POLITICAL THEORY

POSC 2801. Justice and Power 3 sem. hrs. Explores the difference between justice and power with special reference to the authority of a higher law or principle of right; selections from the works of Thucydides, Plato, Machiavelli and others are read. Offered every term.

POSC 4801. Citizens, Beasts, or Gods? 3 sem. hrs.

Evaluates the comparative congeniality to mankind of pre-political 'states of nature,' political citizenship, and the life of philosophy; selections from the works of Rousseau, Nietzsche, Chesterton and Aristotle are read. Offered annually. *Prereq: POSC 2801 or Jr. stndg.*

POSC 4811. The Best Constitution 3 sem. hrs. Examines the relationship between constitutional design and human flourishing; selections from the works of Plato and others are read. Offered annually. *Prereq: POSC 2801 or Jr. stndg.*

POSC 4821. Democracy and Its Problems 3 sem. hrs.

Diagnoses the instability of popular governments in antiquity and considers the remedy provided by the American constitutional republic; selections from the works of Thucydides, Publius, Tocqueville and others. Offered annually. *Prereq: POSC 2801 or Jr. stndg.*

POSC 4841. Enlightenment Political Thought 3 sem. hrs.

The Enlightenment's contribution to modern doctrines of individual rights, representative government, popular sovereignty, free enterprise, religious toleration, and freedom of speech. Authors such as

Locke, Voltaire, Hume, Publius, Rousseau and Burke. Offered every two years.

Prereq: POSC 2801 or Jr. stndg.

POSC 4851. 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 2801 or Jr. stndg.*

POSC 4861. The Political Philosophy of Capitalism 3 sem. hrs.

Is capitalist society just or unjust? Does capitalism promote or inhibit the realization of freedom? Does capitalism promote or inhibit the pursuit of human excellence? Authors such as Rousseau, Adam Smith, Marx, Weber. Offered every two years. *Prereq: POSC 2801; or Jr. stndg.*

POSC 4871. Politics and Literature 3 sem. hrs.

Study of the central questions of political philosophy through the lens of literature, with special focus on how literature approaches the questions of the best regime and the best type of human life. Offered every two years. *Prereq: POSC 2801 or Jr. stndg.*

POSC 4881. Postmodern Politics 3 sem. hrs.

Nietzsche and his successors on the insufficiency of modern ethics and modern politics since the Enlightenment. Focus on the postmodern critique of modernity's contributions to consumerism, globalization and technology. Offered every two years. *Prereq: POSC 2801 or Jr. stndg.*

SPECIAL COURSES

POSC 3953. Undergraduate Seminar Political Science 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 *Schedule of Classes*. *Prereq: Jr. stndg. and cons. of instr.*

POSC 4191. 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 2201 or Jr. stndg.*

POSC 4195. 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. *Prereq: POSC 2201 or POSC 2401 or POSC 2601 or POSC 2801 or Jr. stndg.*

POSC 4931. 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. *Prereq: Jr. stndg.*

POSC 4986. Internship in Political Science 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. In some circumstances (as defined by department policy), a second internship may be taken for university elective credit. The 4-credit section is limited to students in the Les Aspin Center for Government program. S/U grade assessment. *Prereq: POSC 2201 or Jr. stndg.; 2.500 MU GPA; and cons. of dept. ch.*

POSC 4995. Independent Study in Political Science 1-3 sem. hrs.

Prereq: Jr. stndg., cons. of instr., and cons. of dept. ch.

POSC 4996. Senior Experience in Political Science 3 sem. hrs.

The Senior Experience requirement applies to all students who are seeking a B.A. degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq: Sr. stndg., enrolled in the Klingler College of Arts and Sciences.*

POSC 4999. Senior Thesis 3 sem. hrs.

Preparation of a thesis by approved students under the direction of an adviser. Offered every term. *Prereq: Sr. stndg., POSC 4995, which may be taken concurrently, and cons. of dept. ch. Three semester hours of POSC 4995 are required.*

PSYCHOLOGY (PSYC)

Chairperson and Associate Professor: Nielson

Professor: Franzoi, Grych, Guastello, Quereshi (Emeritus), Sheikh

Associate Professor: Czech (Emeritus), de St. Aubin,

McDonald (Emeritus), Saunders, Wierzbicki

Assistant Professor: Campbell, Gerdes, Kaugars,

Oswald, Sanders, Siderits, Torres, Van Hecke

Visiting Assistant Professor: Norden

MAJOR IN PSYCHOLOGY:

Thirty-five hours including PSYC 1001, 2001 and 2050; three elective courses, two of which must be upper division; and at least one upper division course from at least five of the following eight content areas: Developmental (3101 or 3120); Social (3201 or 3230); Cognitive Science (3301, 3320, or 4330); Assessment (3701 or 4701); History and Systems (4801); Personality Theories (3501); Biological (3601); and Abnormal (3401).

Elementary/Middle Education and Psychology double major requirements: PSYC 1001, PSYC 2001, PSYC 2050; three elective courses (one of which may be EDUC 4217, which is equivalent to PSYC 3130; and at least one upper division course from at least five of the following eight content areas: Developmental (3101 or 3120); Social (3201 or 3230); Cognitive Science (3301, 3320, or 4330); Assessment (3701 or 4701); History and Systems (4801); Personality Theories (3501); Biological (3601); and Abnormal

(3401). PSYC 3101 (Developmental) is recommended as one content area because PSYC 3101 can be taken in place of EDUC 1220.

Middle/Secondary Education and Psychology double major requirements: PSYC 1001, PSYC 2001, PSYC 2050; PSYC 3101 (instead of EDUC 1220), PSYC 3201, PSYC 3301 or 3320, PSYC 3501, and PSYC 4801; and three electives, one of which may be EDUC 4217 (equiv. of PSYC 3130).

MINOR IN PSYCHOLOGY:

Six different courses in psychology (18 credit hours minimum), including PSYC 1001 and at least three upper division courses

To pursue Department of Public Instruction certification, College of Education students should follow the psychology minor by selecting the following courses. Twenty-six hours, including PSYC 1001, 2001, 2050, 3101, 3201, 3501, and 4801.

DOUBLE MAJOR IN PSYCHOLOGY AND NURSING:

Thirty-five hours including PSYC 1001, 2001 and 2050, and at least one course from at least five of the following eight content areas: Developmental (2101); Social (3201 or 3230); Cognitive Science (4330, 3301 or 3320); Assessment (3701 or 4701); History and Systems (4801); Personality Theories (3501); Biological (3601); and Abnormal (NURS 3500 and 3501). Double majors in Psychology and Nursing will receive 6 credits toward the psychology major (PSYC 3401 and 4964) by completion of NURS 3500 and 3501.

▲ PSYC 1001. 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 2001. 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: PSYC 1001 or equiv.; three years of high school mathematics or MATH 1100 or its equiv.*

PSYC 2050. Research Methods and Designs in Psychology 4 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 1001 or equivalent and PSYC 2001.*

▲PSYC 2101. Introduction to Life-Span Developmental Psychology for Nursing Students 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. Counts towards the major in Psychology only for students with double majors in Nursing and Psychology. *Prereq: PSYC 1001 or equiv.*

▲PSYC 3101. Developmental Psychology: Conception Through Adolescence 3 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 every term. *Prereq: PSYC 1001 or equiv.*

▲PSYC 3120. Developmental Psychology: 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 1001 or equiv.*

PSYC 3130. 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 3101 or equiv.; or cons. of instr.*

▲PSYC 3201. 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 1001 or equiv.*

▲PSYC 3210. 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. Offered every term. *Prereq: PSYC 1001.*

▲PSYC 3220. 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 1001 or equiv., or cons. of instr.*

PSYC 3230. 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 1001 or equiv.*

PSYC 3301. 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 1001 or equiv.*

PSYC 3320. 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 1001 or equiv.*

▲PSYC 3401. 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 1001 or equiv.*

PSYC 3410. 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 every term. *Prereq: PSYC 1001 or equiv.*

PSYC 3420. 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. *Prereq: PSYC 1001.*

▲PSYC 3501. 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 1001 or equiv.*

PSYC 3550. 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; implications 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 1001 or equiv.*

PSYC 3560. 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. *Prereq: PSYC 1001.*

PSYC 3601. 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 2050 or cons. of instr.*

PSYC 3610. 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. *Prereq: PSYC 1001 or equiv.*

PSYC 3701. 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 1001 or equiv. and PSYC 2001.*

PSYC 3830. 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 1001 or equiv.*

PSYC 3840. Psychology of Happiness 3 sem. hrs.

Focuses on the emerging research and theory in positive psychology on the nature of happiness. The determinants and correlates of happiness will be examined, including the role played by love, humor, forgiveness, religion, compassion, and spirituality in creating happiness. *Prereq: PSYC 1001 or equiv.*

▲PSYC 4330. Human Factors Engineering 3 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. *PSYC 1001 or equiv.; or engineering major.*

PSYC 4350. 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 1001 or equiv.*

PSYC 4701. 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 3501 and PSYC 3401.*

PSYC 4720. 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. *Prereq: Sr. stndg.*

PSYC 4801. 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 2050 or Sr. stndg.*

PSYC 4931. Topics in Psychology 3 sem. hrs. Contemporary theoretical and research trends in selected contemporary areas of psychology. Topics to be announced. *Prereq: Cons. of instr.*

PSYC 4960. 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 4964. Field Experience in Psychology 3 sem. hrs.

Placement in a specially selected applied setting in which the student has the opportunity to observe psychological knowledge, skills, and values demonstrated in one or more professional roles. Requires supervision in the setting and direction by the course instructor. Accompanied by seminar with readings, journals and reflections, presentations a term paper and demonstrated knowledge of appropriate ethical principles. Offered annually. *Prereq: Sr. stndg., psychology major, and cons. of dept. ch.*

PSYC 4995. Independent Study in Psychology 1-3 sem. hrs.

Independent study and research under the direction of a faculty member. *Prereq: Cons. of dept. ch.*

PSYC 4996. Senior Experience in Psychology 3 sem. hrs.

The Senior Experience requirement applies to all students who are seeking a B.A. degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq: Sr. stndg., enrolled in the Klingler College of Arts and Sciences.*

PSYC 4999. 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: 3.000 GPA, PSYC 2050, and cons. of dept. ch.; or Sr. stndg., 3.000 GPA, and cons. of dept. ch.; grade point average of at least 3.500 in Psychology. Maximum of six credits available for PSYC 4999 alone or PSYC 4995 and PSYC 4999 combined.*

RESERVE OFFICERS' TRAINING CORPS**Air Force Aerospace Studies (AFAS)**

Chairperson and Professor: Wohlfiel
Assistant Professor: Meikle, O'Halloran
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 IN AIR FORCE AEROSPACE STUDIES:

AFAS 1011, 1012, 2021, 2022, 3131, 3132, 4141 and 4142; plus 1051 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): 4201 or 4376. Military Science/Army (choose 1): 1100 or 1200. Naval Science/Naval (choose 1): 1009 or 1022.

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 1011. 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 AFAS 1051.

AFAS 1012. Foundations of the Air Force 2 1 sem. hr.

Continuation of AFAS 1011. Open to all students. Students pursuing an Air Force commission must register for AFAS 1051.

AFAS 1051. Leadership Laboratory 0 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. SNC/UNC grade assessment.

AFAS 2021. 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 AFAS 1051.

AFAS 2022. Evolution of the Air Force/Air and Space Power 2 1 sem. hr.

Continuation of AFAS 2021. Open to all students. Students pursuing an Air Force commission must register for AFAS 1051.

AFAS 2964. Air Force Field Training 1-4 sem. hrs.

Off-campus summer program held at Maxwell Air Force Base, Montgomery, Alabama. The program provides the student with practical leadership experience and extensive practical training in fundamental leadership and military skills. Students do not incur military obligation, do not pay expenses, but do receive pay for this training. This course is offered in lieu of AFAS 1011, 1012, 2021, and/or 2022 at the direction of the Department Chair for students pursuing an Air Force Commission. Offered only during the summer. S/U grade assessment. *Prereq: Cons. of dept. ch.*

▲AFAS 3131. Air Force Leadership Studies 1 3 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 AFAS 1051.

AFAS 3132. Air Force Leadership Studies 2 3 sem. hrs.

Continuation of AFAS 3131. All students pursuing an Air Force commission must register for AFAS 1051.

AFAS 4141. National Security Affairs/Preparation for Active Duty 1 3 sem. hrs.

Examines the national security policy process, regional studies, and formulation of the American defense policy, strategy and joint doctrine. Special topics of interest focus on the military as a profession; US Air Force functions, competencies and doctrine; officership; the military justice system; civilian control of the military; preparation for Air Force active duty; and current issues affecting military professionalism. Within this structure, continued emphasis is given to the refinement of communication skills. Students pursuing Air Force commission must register for AFAS 1051.

AFAS 4142. National Security Affairs/Preparation for Active Duty 2 3 sem. hrs.

Continuation of AFAS 4141. All students pursuing Air Force commission must register for AFAS 1051.

AFAS 4995. Independent Study in Air Force and Aerospace Studies 1-3 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: Wickman

Assistant Professor: Bradley, Miller, Washington

Lecturer: Walz

MINOR IN MILITARY SCIENCE AND LEADERSHIP:

MISL 1001, 1002, 2001, 2002, 3001, 3002, 4001, 4002, 1100, 1200; 1800 or HIST 3118; MISL 2100, 2200, 3100, 3101, 3200, 3202, 4100, 4101, 4200, 4202.

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 3118 or MISL 1800, offered fall and spring terms.

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 1001. Military Physical Training Laboratory 1 1 sem. hr.

This goal-oriented, small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This Lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered fall term.

MISL 1002. Military Physical Training Laboratory 2 1 sem. hr.

This goal-oriented, small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This Lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered spring term.

MISL 1100. Foundations of Officership 1 sem. hr.

Introduction to issues and competencies that are central to a commissioned officer's responsibilities. This course is designed to establish a framework for understanding officership, leadership, and Army values. Additionally, the semester addresses "life skills" including fitness and time management. The MISL 10 course is designed to give the student an

accurate insight into the Army Profession and the officer's role within the Army. Offered fall term.

MISL 1200. Basic Leadership 1 sem. hr.

MISL 1100 is designed to build on the experiences of the fall term and further broaden the student's introduction to the Army. Students receive an introduction to communication principles, military briefings, effective writing, problem solving, goal setting, listening and speaking skills, and counseling. Students are provided a broad overview of life in the Army, including the employment benefits and work experiences of junior officers. Offered spring term.

▲MISL 1800. American Crucible: The Military and the Development of the United States 3 sem. hrs.

This course explores American military history from the colonial period to the present through the lens of military affairs and primarily through the land component of the military, the Army. This course will use the Army and the military itself as a lens through which to explore the impact of governmental structures and policies, international affairs, societal change, technological and industrial innovation, and geography on American development. *Prereq:* Cons. of dept. ch.

MISL 2001. Military Physical Training Laboratory 3 1 sem. hr.

This goal-oriented, small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This Lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered fall term.

MISL 2002. Military Physical Training Laboratory 4 1 sem. hr.

This goal-oriented, small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This Lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered spring term.

MISL 2100. Individual Leadership Studies 2 sem. hrs.

Students enrolled in MISL 2100 are placed in a wide variety of group exercises, both inside and outside the classroom, designed to emphasize various professional leadership competencies and insights, such as the fundamentals of team building, decision making, conflict resolution, organizing and planning, creative problem solving and character building. Offered fall term. *Prereq:* MISL 1100 and MISL 1200.

MISL 2200. Leadership and Teamwork 2 sem. hrs.

MISL 2200 focuses on the student's own self-development guided by knowledge of self and group processes. Experiential learning activities, both inside and outside the classroom, are designed to challenge cadets' current beliefs, knowledge and skills. Offered spring term.

Prereq: MISL 1100 and MISL 1200; or cons. of instr.

MISL 3001. Military Physical Training Laboratory 5 1 sem. hr.

This goal-oriented, small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This Lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered fall term.

MISL 3002. Military Physical Training Laboratory 6 1 sem. hr.

This goal-oriented small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This Lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered spring term.

MISL 3100. Leadership and Problem Solving 2 sem. hrs.

MISL 3100 is designed to help prepare students for the challenges of accepting greater responsibility in teaching and participating in Military Science and Leadership Labs. It is the first course that all students seeking a commission in the United States Army must take. Students will be introduced to the principles in the Leader Development Program, the Army's troop leading procedures, and taught how to plan and conduct individual and small unit training. Offered fall term. *Prereq:* MISL 3101, which may be taken concurrently, MISL 1100, MISL 1200, MISL 2100, and MISL 2200, or cons. of instr.

MISL 3101. Applied Leadership Laboratory 1 1 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 3100 which may be taken concurrently.

MISL 3200. Leadership and Ethics 2 sem. hrs. This course is designed to continue the student's development as a leader as he/she receives further instruction in interpersonal communication, values and ethics, and leadership. Additionally, students receive an introduction and overview of various summer training opportunities such as, airborne school and the National Advanced Leadership Camp (NALC). Students are also introduced to the many career choices the Army has to offer. Offered spring term. *Prereq: MISL 3100 and MISL 3202, which may be taken concurrently.*

MISL 3202. 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 3200, which may be taken concurrently.*

MISL 3964. 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 1100, 1200, 2100, and 2200. Offered only during the summer. *Prereq: Cons. of dept. ch.*

MISL 4001. Military Physical Training
Laboratory 7 1 sem. hr.

This goal-oriented small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This Lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered fall term.

MISL 4002. Military Physical Training
Laboratory 8 1 sem. hr.

This goal-oriented small unit approach to physical conditioning and military drill is required for all cadets enrolled in Military Science courses. This Lab is conducted three times per week. It is oriented toward strength, mobility and endurance development. Physical development and the ability to master principles of small unit leadership are also stressed. Student physical development is measured via the Army Physical Fitness Test, consisting of push-ups, sit-ups, and a timed two-mile run. Drill instruction is conducted on Fridays, and stresses fundamentals of unit organization, wear of the uniform, and practical application of small unit leadership techniques. Non-Military Science students may elect to take only the physical conditioning portion of the Laboratory. Offered spring term.

MISL 4100. Officership 2 sem. hrs.

Focuses students on two main areas: the Military Decision Making Process and the Army's Training Management System. It also covers several critical areas needed to operate effectively as an Army officer, including: coordinating activities with staffs, counseling theory and practice within the "army context," and ethics. Offered fall term. *Prereq: MISL 3100, MISL 3200, and MISL 4101, which may be taken concurrently.*

MISL 4101. 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 4200, which may be taken concurrently. SNC/UNC grade assessment.*

MISL 4200. Leadership and Management
2 sem. hrs.

Focuses on completing the transition from cadet to lieutenant. Students receive instruction on the legal aspects of decision-making and leadership, operations from the tactical to strategic level, administrative and logistical management, and a series of Capstone Seminars focusing on entering the Army as a new Lieutenant. These seminars require students, both individually and collectively, to apply their knowledge to solve problems and confront situations commonly faced by junior officers. Offered spring term. *Prereq: MISL 4100, MISL 4101, and MISL 4202, which may be taken concurrently.*

MISL 4202. 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 4100, which may be taken concurrently. SNC/UNC grade assessment.*

MISL 4995. Independent Study in Military Science and Leadership 1-3 sem. hrs.

Independent study of special topics in Military Science under faculty supervision. Topics selected by student/faculty conference. *Prereq: Cons. of dept. ch.*

Naval Science (NASC)

Chairperson and Professor: Radomski
Associate Professor: Keech
Assistant Professor: Bragg, Jones, Osburn, , Sherer

Note: NROTC students should note that most programs will probably entail more than the 128 hours normally required for graduation.

MINOR IN NAVAL SCIENCE:

A minimum of twenty-one hours of Naval Science courses from the following: NASC 1009, 1022, 1142, 1151, 1185, 2152, 2162, 2186 and/or 4995. Marine Option students substitute NASC 1161, 1181, and 2964 for 1142, 1151, 2152 and 2162.

Additional requirements: All Navy Option scholarship students must complete two terms of calculus by the end of the sophomore year (MATH 1450 and 1451). 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 1003 and 1004) by the end of the junior year. Navy Option scholarship students must also complete HIST 3118 or POSC 4376, one term of world culture (see below), and two terms of English. (Courses that fulfill world culture requirement include any of the following: HIST 1301, 1401, 1501, 3455, 4450, 4500, 4555, 4931 [if topic is relevant to Third World and/or Middle Eastern cultures]; POSC 4521, 4531, 4561, 4721, 4731; THEO 4520, 4530. Or other courses by consent of NROTC.) To be competitive for selection for a scholarship, non-scholarship students should plan on completing two terms of calculus (MATH 1450 and 1451) by the end of the freshman year and two terms of physics (PHYS 1003 and 1004) by the end of the sophomore year. For specific details, contact the Professor of Naval Science.

NASC 1001. 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. SNC/UNC grade assessment.

NASC 1009. 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 cons. of dept. ch.

▲NASC 1022. 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 cons. of dept. ch.

NASC 1142. Naval Ship Systems 1 3 sem. hrs.

Ship design, construction, types and missions. Ship compartmentalization, interior communications, propulsion, auxiliary power and ship control systems. Elements of ship design for safe operation. Ship stability characteristics. Offered fall term. Non-NROTC students require cons. of dept. ch.

NASC 1151. 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 cons. of dept. ch.

NASC 1161. 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 cons. of dept. ch.

NASC 1181. Amphibious Warfare 3 sem. hrs.
Application of amphibious doctrine to battles throughout history. Offered alternate fall terms. Non-NROTC students require cons. of dept. ch.

▲NASC 1185. 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 cons. of dept. ch.

NASC 2152. 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 1151. Non-NROTC students require cons. of dept. ch.

NASC 2162. 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 spring term. *Prereq: NASC 1142. Non-NROTC students require cons. of dept. ch.*

NASC 2186. Leadership and Core-Value-Based Decision-Making 3 sem. hrs.

Application of techniques and theories learned in NASC 1185. Practical application of sound leadership and ethics to Navy situations. Investigation of levels of ethical decision-making: legal, constitutional, utilitarian, divine. Examination of role of honor, courage and commitment in leadership. Offered spring term. *Prereq: NASC 1185. Non-NROTC students require cons. of dept. ch.*

NASC 2964. United States Marine Corps Leadership and Management Practicum
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. S/U grade assessment.

Prereq: Jr. stndg. in USMC option.

NASC 4995. Independent Study in Nava Sciences 1-3 sem. hrs.

Independent study of special topics in Military Science under faculty supervision. Topics selected by student/faculty conference.

Prereq: cons. of dept. ch.

SOCIAL AND CULTURAL SCIENCES

*Chairperson and Associate Professor: R. Jones
Assistant Chairperson and Professor: Holstein
Professor: Buckholdt, Kehoe (Emerita), Miller,
Moberg (Emeritus)*

*Associate Professor: Coles, Farkas, Peterson,
Sullivan, Zevitz*

*Assistant Professor: Cainkar, Hinojosa, Hlavka,
Moon, Mulla, Semukhina, Strosline, Wheelock
Adjunct Assistant Professor: Crane*

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 2301 which is grouped with courses in method and theory; ANTH 3100, 3350, 3360, 3370, and cover cultural anthropology; ANTH 3242, 3250, 3546, 4144, 4245, 4247, and 4964 represent archaeology; and ANTH 3153, 4251, 4252 and 4255 list physical anthropology.

MAJOR IN ANTHROPOLOGY:

Thirty hours, including ANTH 1001, 2101, 2201, 2301, 3201, 4997 and 12 additional hours in upper division courses. Up to two of the following courses will count as electives in the ANTH major: CRLS 4120; SOWJ 3001; SOCI 3500, 3550 and 4420.

MINOR IN ANTHROPOLOGY:

Eighteen hours, including ANTH 1001.

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 1001. 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 1201. 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 2201. Credit will be given toward fulfillment of the Natural Science requirement in the Arts and Sciences College Curriculum.

ANTH 2101. 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 2201. Human Evolutionary Process
3 sem. hrs.

Darwinian models of evolutionary process. Critiques of the Darwinian model with reference to macro-evolutionary process in the order Primates and microevolutionary events in the species sapiens. Credit will be given toward fulfillment of the Natural Science requirement in the Arts and Sciences College Curriculum. Cannot be taken for Arts and Sciences Natural Science credit by students who have taken ANTH 1201.

ANTH 2203. Human Geography 3 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 2301. Language and Culture 3 sem. hrs.

The role of language in human life. Comparative linguistic analysis. Interdependence of language and culture.

ANTH 2501. Buried Cities and Lost Tribes
3 sem. hrs.

Using the tools of scientific inquiry, critical reasoning, and multicultural understanding, surveys a variety of historic and modern misconceptions about past cultures. Includes how to assess claims about the past, using archeological data and interpretative tools; and apply these new standards to gain appreciation for some truly exciting recent archeological discoveries.

Prereq: ANTH 1001 or consent of instructor.

ANTH 3100. Urban Anthropology 3 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. Recommended: ANTH 1001 or ANTH 2101.

ANTH 3101. 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. ANTH 1001 recommended.

ANTH 3153. 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. *Prereq: ANTH 1001.*

ANTH 3201. 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 3242. 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. ANTH 3201 recommended.

ANTH 3250. 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. ANTH 3201 recommended.

ANTH 3312. 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.

ANTH 3330. 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 3350. 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 3360. 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. Recommended: ANTH 1001 or ANTH 2101.

ANTH 3370. 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.

ANTH 3543. Archeology of Ancient Egypt 3 sem. hrs.

The archeological and historic record is used to provide a survey of ancient Egyptian socio-cultural development. Emphasis is given to the interaction of economic, political and religious forces involved in state formation. The development of religious belief in Egypt is studied through surveys of iconography and an introduction to reading hieroglyphs. Offered alternate years. ANTH 1001 or cons. of instr.

ANTH 3546. Archaeology in Action: Ethnographic and Experimental Approaches 3 sem. hrs.

This course introduces students to the theories and methods of ethnoarchaeology: how archaeologists understand material culture patterns and cultural content through the study of living groups. Case studies highlight the historical development of the field and the variety of approaches that are used. Offered alternate years. Recommended: ANTH 3201.

ANTH 3986. 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. S/U grade assessment. *Prereq: Sr. stndg. and ANTH major; and cons. of dept. ch. Limited enrollment. Internships in Anthropology may also be taken under the terms and conditions specified for other departmental internships (see CRLS 3986, SOCI 3986, SOWJ 3986).*

ANTH 4144. 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 3201 or cons. of instr.*

ANTH 4245. 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 3201.*

ANTH 4247. 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 3201 or cons. of instr.*

ANTH 4251. 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 2201.*

ANTH 4252. 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 2201.*

ANTH 4255. 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. *Prereq: ANTH 2201.*

ANTH 4316. 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. Recommended: ANTH 1001 and ANTH 2101.

ANTH 4931. Topics in Anthropology 3 sem. hrs.

Various topics will be designated in the *Schedule of Classes*. May be taken a maximum of two times.

ANTH 4964. 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 3201 and SOCI 2060 or equiv.

ANTH 4986. Advanced Internship in Anthropology 3 sem. hrs.

A minimum of 10 hours per week supervised practice at the same agency as the previous semester. *Prereq: ANTH 3986 and cons. of internship coordinator. Limited enrollment.*

ANTH 4995. Independent Study in Anthropology 1-3 sem. hrs.

Supervised study of a specific area or topic in anthropology. *Prereq: Cons. of dept. ch.*

ANTH 4996. Senior Experience in Anthropology 3 sem. hrs.

The Senior Experience requirement applies to all students who are seeking a B.A. degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq: Sr. stndg., enrolled in the Klingler College of Arts and Sciences.*

ANTH 4997. Capstone: Theory and Practice in Anthropology 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 and twelve hours of course work in Anthropology.*

ANTH 4999. 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 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 Criminology and Law Studies are taught by faculty from both the Klingler College of Arts and Sciences and criminal justice practitioners.

MAJOR IN CRIMINOLOGY AND LAW STUDIES:

Thirty hours, including CRLS 1001, 3050 (or SOCI-3050), 3100, 3300 or 3350, 3400, and 3500, plus twelve hours selected from other CRLS courses. Up to two of the following courses will count as electives in the CRLS major: CLLS 2050, CMST 3800, SOCI 3600, SOCI 4600 and SOCI 4660.

Majors must fulfill half of their college curriculum mathematics-logic-computer requirement with SOCI 2060 (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 2100, 3000, 3050, 4130, 4640; SOCI 3050, 3600, 4600, 4660. 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 2100, 3000, 3050, 3100, 3300, 3400, 3500, 3600, 4120, 4130, 4250, 4450, 4620, 4640, 4660, 4700. Students may meet the research methods requirements for both majors by taking either CRLS 3050 or SOCI 3050. A total 54 credit hours from CRLS and SOWJ classes is required.

MINOR IN CRIMINOLOGY AND LAW STUDIES:

Eighteen hours, including CRLS 1001 and fifteen hours of electives in CRLS courses (with the exception of 3986).

▲ CRLS 1001. 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 2001. 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.

CRLS 2100. Juvenile Delinquency and 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.

CRLS 3000. 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.

CRLS 3050. 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. May not be taken for credit by students who have received credit for SOCI 3050. Offered every term.

Prereq: SOCI 2060 or equiv., or cons. of instr.

CRLS 3100. 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 1001.*

CRLS 3241. 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. May be counted toward CRLS major course requirements. Same as POSC 4241. *Prereq: POSC 2201 or Jr. stndg.*

CRLS 3300. 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 1001.*

CRLS 3350. 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.

CRLS 3400. 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 1001.*

CRLS 3500. 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 1001.*

CRLS 3600. 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.

CRLS 3660. Sex Offenses and Offenders 3 sem. hrs.

Examines the nature of distribution of sex offenses and the various types of sex offenders. Approaches of mental health and criminal justice systems are examined, including an analysis of laws, policies and practices surrounding treatment, management and control of sex offenders. Impact on sex offenders, families and victims will also be addressed.

Prereq: CRLS 1001 or consent of instructor.

CRLS 3751. History and Philosophy of Crime and Punishment 3 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 1001. Same as HIST 3751 and PHIL 3751. May be counted toward the core curriculum requirement in either philosophy or social-behavioral science.

CRLS 3986. Internship and Seminar in Criminology and Law Studies 3 sem. hrs.

Field experience in federal, state, county or municipal criminal justice or administrative law agencies for the purpose of furthering the student's integration of theory and practice in a professional setting. Placement is for a minimum of 10 hours per week under the supervision of agency personnel, and includes a 2 hour per week seminar class with the internship coordinator. S/U grade assessment.

Prereq: Sr. stndg., CRLS major, and cons. of dept. ch. Limited enrollment.

CRLS 4100. 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.

CRLS 4110. Media Perspectives on Urban Crime 3 sem. hrs.

Historical overview of how urban crime has been portrayed in the media. Analysis of contemporary media presentations of urban crime, criminals, and the criminal justice system (including police, courts, and the correctional system). Social scientific theory and analysis regarding media portrayals of crime, criminals, and the criminal justice system.

CRLS 4120. Comparative Justice Systems 3 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.

▲CRLS 4130. 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.

CRLS 4140. Race, Crime and Punishment 3 sem. hrs.

Focus on racial differences on offending and violence; racial discrimination in the criminal justice system; and the impact of criminal punishment on racial inequality. Course will cover current and classical research in race, crime and social control and explore their theoretical and empirical dimensions.
Prereq: CRLS 1001 or consent of instructor.

CRLS 4150. White Collar Crime 3 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.

CRLS 4170. 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.

CRLS 4250. 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.

CRLS 4340. 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 record keeping, accounting, interviewing techniques, and law and evidence as they relate to financial investigations.

CRLS 4450. 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.

CRLS 4500. 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.

CRLS 4600. 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.

CRLS 4620. Victim Services and Policies 3 sem. hrs.

This course will explore the history of victim services, the effects of victimization on individuals, families, and communities, and policy development. Services available to victims both within the criminal justice system and externally will also be a focus. Specialized topics may include family violence, workplace violence, public tragedy, violent crime, and white collar crime.

CRLS 4640. 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.

CRLS 4660. 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.

CRLS 4700. 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. *Prereq: CRLS 1001.*

CRLS 4931. 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 *Schedule of Classes*. May be taken a maximum of two times.

CRLS 4986. Advanced Internship and Seminar in Criminology and Law Studies 3 sem. hrs.

Continuation of the internship experience (CRLS 3986). A minimum of 10 hours per week supervised practice at the same agency as the previous semester, and a two-hour-per-week seminar. Credits earned cannot be counted toward the major. Offered annually. S/U grade assessment. *Prereq: CRLS 3986 and cons. of the internship coordinator. Limited enrollment.*

CRLS 4995. Independent Study in Criminology and Law Studies 1-3 sem. hrs.

Readings and research on a particular problem or subject of interest to the student.
Prereq: Cons. of instr. and cons. of dept. ch.

CRLS 4996. Senior Experience in Criminology and Law Studies 3 sem. hrs.

The Senior Experience requirement applies to all students who are seeking a B.A. degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide

an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices.

Prereq: Sr. stndg., enrolled in the Klingler College of Arts and Sciences.

Social Welfare and Justice (SOWJ)

The Social Welfare and Justice major is designed to provide students with the knowledge and experience 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 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 IN SOCIAL WELFARE AND JUSTICE:

Requirements: Thirty hours total, including SOWJ 1001, 3001, 3300; SOCI 3050 or CRLS 3050 (students also majoring in psychology may take PSYC 2050 in place of SOCI 3050 OR CRLS 3050), plus eighteen hours of electives. Majors are also required to take the following cognate courses: SOCI 2060 (Psychology majors may take PSYC 2001) and PHIL 4320.

Electives: All courses designated as SOWJ classes, plus ANTH 3330, 3350, 4316; CRLS 2100, 3000, 3100, 3300, 3400, 3500, 3600, 4120, 4130, 4250, 4450, 4620 4640, 4660, 4700; SOCI 2100, 2200, 2250, 2400, 3000, 3200, 3250, 3500, 3520, 3550, 3600, 4060, 4100, 4130, 4250, 4270, 4300, 4400, 4450, 4600, 4630, 4660, 4680, 4700, 4720, 4740

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 total, including SOWJ 1001, 2200, 3001, 3300, 3400, 3986, 4986, SOCI-3050 or CRLS 3050 (students also majoring in psychology may take PSYC 2050 in place of SOCI 3050 OR CRLS 3050), plus six hours of electives. Majors must fulfill part of their college curriculum

math-logic-computer requirement by taking SOCI 2060 (students also majoring in psychology may take PSYC 2001 in place of SOCI 2060), and must fulfill part of their college curriculum philosophy requirement by taking PHIL 4320.

Electives: All courses designated as SOWJ classes, plus ANTH 3330, 3350, 4316; CRLS 2100, 3000, 3300, 3400, 3500, 3600, 4120, 4130, 4250, 4450, 4620, 4640, 4660, 4700; SOCI 2100, 2200, 2250, 3000, 3200, 3250, 3500, 3520, 3550, 3600, 4100, 4130, 4250, 4270, 4300, 4400, 4450, 4600, 4630, 4660, 4680, 4740.

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 total, including SOWJ 1001, 3001, 3300, 3400, 3986; CRLS 3600, 4620; SOCI 3050 or CRLS 3050 (students also majoring in psychology may take PSYC 2050 in place of SOCI 3050 OR CRLS 3050); plus six hours of electives. Majors must fulfill part of their college curriculum Math-Logic-Computer requirement by taking SOCI 2060 (students also majoring in psychology may take PSYC 2001 in place of SOCI 2060), and must fulfill part of their college curriculum philosophy requirement by taking PHIL 4320.

Electives: All courses designated as SOWJ classes, plus ANTH 3330, 3350, 4316; CRLS 2100, 3000, 3300, 3400, 3500, 3600, 4120, 4130, 4250, 4450, 4620, 4640, 4660, 4700; SOCI 2100, 2200, 2250, 3000, 3200, 3250, 3500, 3520, 3550, 3600, 4100, 4130, 4250, 4270, 4300, 4400, 4450, 4600, 4630, 4660, 4680, 4740.

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 12 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 2100, 3000, 3050, 3100, 3300, 3400, 3500, 3600, 4120, 4130, 4250, 4450, 4620, 4640 4660, 4700. Students may meet the research methods requirements for both majors by taking either CRLS 3050 or SOCI 3050. 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. Up to two courses from the following list may be counted for credit towards both the SOWJ and SOCI majors: SOCI 2100, 2200, 2250, 2400, 3000, 3050, 3200, 3250, 3500, 3520, 3550, 3600, 4060, 4100, 4130, 4250, 4270, 4300, 4400, 4450, 4600, 4630, 4660, 4680, 4700, 4720, 4740; SOWJ 2200. Students may meet the research methods requirements for both majors by taking either CRLS 3050 or SOCI 3050. A total 54 credit hours from SOCI and SOWJ classes is required.

MINOR IN SOCIAL WELFARE AND JUSTICE:

Eighteen hours, including SOWJ 1001, 3001 and 3300, plus either SOCI 3050 or CRLS 3050, and 6 hours of elective courses.

▲ SOWJ 1001. 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. Offered annually.

SOWJ 2200. 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. Offered annually.

SOWJ 3001. 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. Offered annually.

SOWJ 3150. Immigrants and their Communities 3 sem. hrs.

Examination of historic and contemporary immigration to the U.S., especially in relationship to the American economy and ideas about race and ethnicity. Examines the impacts of immigrant integration strategies in the economic mobility and physical and social well-being of immigrant families. *Prereq: SOWJ 1001 or consent of instructor.*

SOWJ 3300. 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. Offered annually. *Prereq: SOWJ 1001.*

SOWJ 3370. 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.

SOWJ 3400. 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 3640. Domestic Violence in the United States 3 sem. hrs.

Focuses on the ways in which race and ethnicity shape definitions of and experiences with domestic violence. Attention given to the ways in which different racial and ethnic groups interact with community and legal resources designed to assist victims and perpetrators of domestic violence and the implications this has for policy, practice and justice in society. *Prereq: SOWJ 1001 or CRLS 1001 or consent of instructor.*

SOWJ 3986. Internship in Social Welfare and Justice 3 sem. hrs.

Field experience in a community social service agency for the purpose of furthering the student's integration of theory and practice in a professional setting. Placement is for a minimum of 10 hours per week under the supervision of agency personnel, and includes a 2 hour per week seminar with the internship coordinator. Offered annually. S/U grade assessment. *Prereq: Sr. stndg., SOWJ major, and cons. of internship coordinator. Limited enrollment.*

SOWJ 4300. 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 1001.*

SOWJ 4450. Arab and Muslim Americans 3 sem. hrs.

Explores the socio-economic and political contexts that shaped Arab emigration to the United States and the growth of Arab American communities. Examines the growth of Muslim American communities brought about by the increasing immigration and analyzes specific issues faced by Muslims in American society. *Prereq: SOWJ 1001 or consent of instructor.*

SOWJ 4500. 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 4600. Faith-based Activism 3 sem. hrs.

Analyzes sociologically a range of historic and contemporary faith-based movements through the application of social movement theory. Identifies variations in goals and objectives, issues framing, grassroots mobilization, leadership styles, techniques and strategies, engagement of faith symbols,

and movement cultures and outcomes through an examination of movement literature, oral histories, archives, films and scholarly studies.

Prereq: SOWJ 1001 or consent of instructor.

SOWJ 4931. Topics in Social Welfare and Justice 3 sem. hrs.

A lecture course on special areas and themes. Specific topics will be designated in the *Schedule of Classes*.

SOWJ 4986. Advanced Internship in Social Welfare and Justice 3 sem. hrs.

Continuation of the internship experience (SOWJ 3986). A minimum of 10 hours per week supervised practice at the same agency as the previous semester, and a 2 hour per week seminar. Offered annually. S/U grade assessment. *Prereq: SOWJ 3986 and cons. of internship coordinator. Limited enrollment.*

SOWJ 4995. Independent Study in Social Welfare and Justice 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 GPA of 2.500 in SOWJ courses.

SOWJ 4996. Senior Experience in Social Welfare and Justice 3 sem. hrs.

The Senior Experience requirement applies to all students who are seeking a B.A. degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq: Sr. stdng., enrolled in the Klingler College of Arts and Sciences.*

SOWJ 4999. 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. stdng., 3.000 GPA, and cons. of dept. ch.

Sociology (SOCl)

MAJOR IN SOCIOLOGY:

Thirty hours, including SOCl 1001, 2060, 3000, 3050 (or CRLS 3050), 4997. SOCl 4997 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 SOCl 2060 with the approval of the Department Chair, but 30 hours in Sociology will still be required. SOCl 2060 may be used simultaneously to satisfy the Sociology requirement and to contribute toward the six hour Arts and Sciences college requirement for mathematics-logic-computer. Up to two of the following courses will count as electives in the SOCl major: ANTH 2101, CRLS 2100, CRLS 3000, CRLS 4130, CRLS 4640 and SOWJ 2200.

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 SOCl majors: CRLS 2100, 3000, 3050, 4130, 4640; SOCl 3050, 3600, 4600, 4660. A total of 54 credit hours from SOCl 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 SOCl majors: SOCl 2100, 2200, 2250, 2400, 3000, 3050, 3200, 3250, 3500, 3520, 3550, 3600, 4060, 4100, 4130, 4250, 4270, 4300, 4400, 4450, 4600, 4630, 4660, 4680, 4700, 4720, 4740; SOWJ 2200. Students may meet the research methods requirements for both majors by taking either CRLS 3050 or SOCl 3050. A total 54 credit hours from SOCl and SOWJ classes is required.

MINOR IN SOCIOLOGY:

Eighteen credit hours, including SOCl 1001 and either 3000 or 3050 (preferably both).

To pursue Department of Public Instruction certification, College of Education students should follow the sociology minor by selecting the following courses. Twenty-one hours, including ANTH 1001; SOCl 1001, 3000, 3050; and 9 additional hours in sociology and anthropology, of which no more than three may be in anthropology.

PREREQUISITES:

The department recommends SOCl 1001 — Principles of Sociology — as the beginning course in Sociology. Most upper-division courses have a recommended prerequisite of SOCl 1001. 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 SOCl 1001 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.

▲SOCl 1001. 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.

▲SOCl 2060. Social Statistics 3 sem. hrs.

Logic and application of statistical reasoning in social research. Topics may include: descriptive statistics, elements of probability theory, estimation, hypothesis testing, contingency tables, correlation, regression, sampling, questionnaire construction, and measurement. Introduction to the use of the computer in statistical analysis. Credit will not be granted if student receives credit for another elementary statistics course. Offered annually. *Prereq: SOCl 1001 and MATH 105 or equiv.; or SOWJ 1001 and MATH 105 or equiv.; or CRLS 1001 and MATH 105 or equiv.; or consent of instructor and MATH 105 or equiv. Three years of high school preparatory mathematics can substitute for MATH 105.*

SOCl 2100. Juvenile Delinquency and Juvenile Justice 3 sem. hrs.

SOCl 1001 recommended. Same as CRLS 2100; CRLS majors register for CRLS 2100.

▲SOCl 2200. 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.

▲SOCl 2250. 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. Recommended: SOCl 1001, SOCl 2200, or ANTH 2101.

SOCl 2300. 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. Recommended: SOCl 1001.

SOCl 2400. 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. SOCl 1001 recommended.

SOCl 3000. 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 SOCl 3050. Offered annually. *Prereq: SOCl 1001 or cons. of instr.*

SOCl 3050. 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 projects. Contribution of alternative methods to theory building, program evaluation, policy formulation, and direction of subsequent research. May not be taken for credit by students who have received credit for CRLS 3050. Offered annually.

Prereq: SOCl 1001 and SOCl 2060, or cons. of instr.

SOCl 3100. 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. SOCl 1001 recommended.

SOCl 3200. 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. SOCl 1001 recommended.

▲SOCI 3250. 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. SOCI 1001 recommended.

SOCI 3480. 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; and sports and community identification. The course will show how sports are a pervasive feature of everyday urban life. SOCI 1001 recommended.

SOCI 3500. Culture, Health and Illness

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. Recommended: SOCI 1001, ANTH 1001, or ANTH 2101.

SOCI 3520. 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. Recommended: SOCI 1001.

SOCI 3550. Race, Gender and Medicine

3 sem. hrs.

Historical overview of medical ideas regarding race and gender. Examination of medical and scientific models of mind, body, race, and gender, and their implications for health assessment, medical treatment, and health care policy. Consideration of social, cultural, and political dimensions of medicine in relation to race and gender. SOCI 1001, ANTH 1001, or ANTH 2101 recommended.

SOCI 3570. Men, Masculinities and Health

3 sem. hrs.

Explores the social and psychological constructions of men's gender identities at various stages during the lifecourse and how those identity constructions are intertwined with health outcomes. SOCI 1001 recommended.

SOCI 3600. Deviance and Social Control

3 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. SOCI 1001 recommended.

SOCI 3931. 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 *Schedule of Classes*. SOCI 1001 recommended.

SOCI 3986. Internship and Seminar in Sociology

3 sem. hrs.

Field experience relating sociological theory, concepts and research methodology to real life or

applied settings. Placement is for a minimum of 10 hours per week under the supervision of agency personnel, and includes a 2 hour per week seminar with the internship coordinator. Offered annually. S/U grade assessment.

Prereq: Sr. stndg., SOCI major, and cons. of the internship coordinator. Limited enrollment.

SOCI 4000. 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. SOCI 1001 recommended.

SOCI 4010. 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. SOCI 1001 recommended.

SOCI 4060. 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 *Schedule of Classes* for precise contents. May be taken more than once if topics differ.

SOCI 4100. 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. SOCI 1001 recommended.

SOCI 4130. Sociology of Human Values

3 sem. hrs.

Definitions of values in economics, linguistics, communication and sociology. The value system of selected sociologists. Values and sociocultural pluralism. SOCI 1001 recommended.

SOCI 4200. The Social Reality of Troubles

3 sem. hrs.

Deals with the social realities of troubles, which range from circumstances that we treat as irksome to major traumas in our lives that become social problems. Focuses on the commonalities shared by these various social constructions. Draws from a variety of disciplines, notably sociology, social work, anthropology, history, psychology, linguistics and rhetorical studies. SOCI 1001 recommended.

SOCI 4250. African-American Social Thought

3 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. SOCI 1001 recommended.

SOCI 4270. 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. SOCI 1001 recommended.

SOCI 4300. 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. SOCI 1001 recommended.

▲SOCI 4400. Social Inequality

3 sem. hrs.

Theories and systems of social class in modern society. Societal structures and processes resulting from stratification phenomena. SOCI 1001 recommended.

SOCI 4420. Sociology of Religion

3 sem. hrs.

The sociological study of religious groups, institutions and behavior, including relationships between religion and other areas of social life. Recommended: SOCI 1001.

SOCI 4440. Sociology of Education

3 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. Recommended: SOCI 1001.

SOCI 4450. 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. SOCI 1001 recommended.

SOCI 4460. 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. SOCI 1001 recommended.

SOCI 4480. 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. SOCI 1001 recommended.

SOCI 4600. 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. Recommended: SOCI 1001.

SOCI 4630. 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. SOCI 1001 recommended. CRLS majors register for CRLS 4130.

SOCI 4660. Law and Society

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 1001 recommended.

SOCI 4680. 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. SOCI 1001 recommended.

SOCI 4700. 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. SOCI 1001 recommended.

SOCI 4720. 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. SOCI 1001 recommended.

SOCI 4740. 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. SOCI 1001 recommended.

SOCI 4931. 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. Specific topic will be designated in the *Schedule of Classes*.

SOCI 4986. Advanced Internship and Seminar in Sociology 3 sem. hrs.

Continuation of the internship experience (SOCI 3986). A minimum of 10 hours per week supervised practice at the same agency as the previous semester, and a 2 hour per week seminar. Credits earned cannot be counted toward the major. Offered annually. S/U grade assessment.

Prereq: SOCI 3986 and cons. of internship coordinator. Limited enrollment.

SOCI 4995. Independent Study in Sociology 1-3 sem. hrs.

Supervised study in a specific area of Sociology. *Prereq: Cons. of dept. ch. and twelve hours of Sociology courses with a GPA of 2.500.*

SOCI 4996. Senior Experience in Sociology 3 sem. hrs.

The Senior Experience requirement applies to all students who are seeking a B.A. degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq: Sr. stndg., enrolled in the Klingler College of Arts and Sciences.*

SOCI 4997. Capstone 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 and 21 hours of sociology; or cons. of dept. ch.*

SOCI 4999. Senior Thesis 1-3 sem. hrs.

Sociology majors with a GPA of 3.000 or higher may write a thesis under direction of an adviser. Offered every term. *Prereq: Sr. stndg., SOCI 3000, SOCI 3050, and cons. of dept. ch.*

THEOLOGY (THEO)

*Chairperson and Professor: Wood
Assistant Chairperson and Associate Professor: Lysaught*

Distinguished Professor: Carey (William J. Kelly, S.J., Chair), Doran (Emmett Doerr Chair)

Professor: Coffey (Emeritus), Fahey (Emeritus), Golitzin, Hagen (Emeritus), Kurz, Long, Maguire, Misner (Emeritus), Rossi, Schultenover

*Visiting Professor: Wriedt
Associate Professor: Barnes, Dabney, Del Colle, Dempsey, Duffey, Hills, Hughson, Kelly (Emeritus), M. Johnson, Laurance, Massingale, Masson, Mattox, J. Mueller, Pace, Schmitt, Zemler-Cizewski*

*Assistant Professor: Deahl, Lehner, Morales, Nussberger, Orlov, Omar, Schaefer
Lecturer: Anderson, E., Anderson, T., Brown, B., Celsor, Crowe, Dorn, Dunn, Harris, Heidebrecht, Henery, J.A. Jones, Kilcrease, Kolasny, Kroemer, Mountin, Nielsen, Ojako, Oliverio, Rapela Heidt, Shellberg, Zampino, Zemler*

MAJOR IN THEOLOGY:

Thirty-three hours, which include THEO 1001 and 30 upper-division hours in the following areas.

A two-course scripture sequence, either THEO 2000 + THEO 2110 or THEO 2100 + THEO 2010.

Three historical courses: THEO 2210 + THEO 4200 and one of the following: THEO 4210, 4230, 4240, or 4260.

Two systematics courses out of the following three: THEO 4320, 4330, 4340.

One of the following ethics courses: THEO 4400, 4405, 4410, 4420.

One of the following world religions courses: THEO 4020, 4510, 4520, 4530, 4540.

And THEO 4997.

Depending on a student's preparation and educational needs, other courses may be substituted by approval of the departmental adviser, who may also suggest cognate courses in other departments. Students preparing for graduate studies in theology are encouraged to begin courses in a necessary classical (Greek/Hebrew/Latin) or modern (French/German) language.

MAJOR IN THEOLOGY FOR CATHOLIC SCHOOL MINISTRY:

This major is particularly focused on preparing future teachers of theology in Catholic high schools. Students taking this major are required to complete, in addition to a series of theology courses, required

courses in the College of Education's teacher education sequence. At the conclusion of the program, each student should be able 1) to demonstrate a basic knowledge of Scripture, Church history, Catholic doctrine, and ethics, 2) to demonstrate an understanding of and appreciation for the Catholic intellectual and theological tradition, 3) to use critical tools in reading and interpreting the texts of the Christian tradition, 4) to provide evidence for effective skills in oral and written communication, 5) to demonstrate in practice knowledge of educational methods and effective skills sufficient for teaching at the high school level.

Thirty-six required credit hours in Theology include the following: THEO 1001; THEO 2000 AND 2100; THEO 2210; THEO 4320, 4330, and 4340; THEO 4490; three elective third-level courses (nine credit hours); THEO 4997.

Nineteen required credit hours in the College of Education: EDUC 1210 and 1220 (each in freshman or sophomore year); EDUC 2227 (in sophomore year); EDUC 2037 and 4297 (each in junior year); EDUC 4067 (in senior year). In order to take EDUC 2037, 4067, and 4297, students must pass an examination administered through the College of Education.

This major does not meet Wisconsin State DPI requirements for state certification for teaching.

MINOR IN THEOLOGY:

At least 18 hours (6 courses), of which 15 credits (5 courses) must be upper division courses.

Note: See Theology Requirements as stated in the College, School and Programs sections of this bulletin.

THEOLOGY CURRICULUM:

The University Core of Common Studies (UCCS) Theology requirement for graduation is the six-hour sequence of two courses: THEO 1001 and any second-level course (THEO 2000 level, THEO 9398) approved for inclusion in the UCCS (approved courses are marked in this bulletin); the Klingler Arts and Sciences Theology requirement is the full sequence of THEO 1001, a second-level course, and any third-level course (THEO 4000-4995; THEO 9399). Students may choose as electives additional courses, beyond the requirements of their college, from both the second- and third-level offerings if they have the proper prerequisites.

The comprehensive educational goal of the theology curriculum is theological literacy at the level legitimately expected of graduates of a Catholic university. Through investigation of various theological sources, this intellectual formation habituates students to approaches, responses, and critiques appropriate to the academic discipline of theology, which is "faith seeking understanding." Three specific objectives guide the theology curriculum. Every course is designed, first, to increase the student's awareness of the mystery and religious dimensions of human life, particularly as conveyed in the basic narrative outline of salvation history — which characterizes the Christian worldview — from creation to fulfillment in Jesus Christ. This objective takes precedence in the first course, "Introduction to Theology," THEO 1001; this first-level course introduces key sources and questions of theology, at the same time that it provides the student with a necessary knowledge base.

While cultivating the student's growing base of factual knowledge, courses go on to provide the student with training in theological understanding, primarily through the reading and interpreting of significant texts. Second-level courses, with

their objective of “Exploring Theological Texts and Interconnections” — especially regarding representations of God, religious community, and the human person — are designed to develop the skills required for such understanding. The knowledge and skills garnered in second-level courses are essential background for enabling students to achieve the objectives of the third-level courses.

Third-level courses, by investigating particular theological topics with discipline-specific methods, develop in students the critical habit of seeing into the depth-dimension of reality in light of religious faith and its historical effects on human societies. A wide variety of third-level classes, all building on the first-level and the second-level courses, develop this critical habit in the student. Third-level offerings include interdisciplinary courses to investigate theological questions; courses that focus on a particular person, time period, or topic; courses that examine the impact of religion on our daily lives; and courses that explore non-Christian religious traditions. As the culmination of the three-course sequence, these courses aim to produce Jesuit university graduates who are able to discern the perennially significant in the complexity and conflicting values of modern life, “men and women for others,” intellectually prepared to “find God in all things.” Building on the achievements of the first-level and second-level courses, third-level courses aim in a special way to encourage students to become responsible citizens, drawn to the intellectual life, knowledgeable about their own religious traditions, and appreciative of the religious beliefs and practices of others in the human community.

In all courses, theological issues are introduced and discussed with respect for others in keeping with the Declaration on Religious Liberty of the Second Vatican Council.

FIRST LEVEL: INTRODUCTORY COURSE

▲THEO 1001. 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: EXPLORING THEOLOGICAL TEXTS AND INTERCONNECTIONS

▲THEO 2000. 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 1001.*

▲THEO 2010. 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 1001.*

▲THEO 2100. 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 1001.*

▲THEO 2110. 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 1001.*

▲THEO 2200. 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 1001.*

▲THEO 2210. 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 1001.*

▲THEO 2220. 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). *Prereq: Soph. stndg. and THEO 1001.*

▲THEO 2300. 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 1001.*

▲THEO 2310. 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 1001.*

▲THEO 2320. The Event and Meaning of Vatican II 3 sem. hrs.

The reasons for which this ecumenical council was called. The historical context in which it was celebrated from 1962 until 1965. The meaning of this council's documents for Christian conceptions of God, the human community, the Church, the world, and the interaction of all of these. Offered annually. *Prereq: Soph. stndg. and THEO 1001.*

▲THEO 2400. 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 1001.*

▲THEO 2410. 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 1001.*

▲THEO 2420. Bridging the Racial Divide 3 sem. hrs.

Examination of racism, ethnic tension, and theology from the perspective of “white privilege” and African American experience in American Christianity. Reflects on the intersection of these areas to discover, on the other hand, to discern how specific theological notions contribute positively or negatively to our understanding of race, ethnic tension and social justice. *Prereq: THEO 1001*

THIRD LEVEL: FAITH, RESPONSIBILITY, AND THE INTELLECTUAL LIFE

▲THEO 4000. 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. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

▲THEO 4010. 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 and is currently being used in various communities. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

▲THEO 4020. 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. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

▲THEO 4030. 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., THEO 1001, and one second-level course.*

▲THEO 4030. 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., THEO 1001, and one second-level course.*

▲THEO 4130. Religion and American Life 3 sem. hrs.

Survey the historical impact of religious belief and institutions on the intellectual, cultural, and public life of the United States. *Prereq: Jr. stndg., THEO 1001 and one second-level course.*

THEO 4190. Studies in Biblical Theology

3 sem. hrs.

Significant topics in Old Testament, Intertestamental, or New Testament literature. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4200. 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., THEO 1001, and one second-level course.*

THEO 4210. 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., THEO 1001, and one second-level course.*

THEO 4220. 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. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4230. Theology in the Middle Ages

3 sem. hrs.

Basic theological questions and developments during the Middle Ages, from the Carolingians to the fourteenth century. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4240. 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. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4250. 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. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4260. Theology in America

3 sem. hrs.

Basic theological questions and developments from Puritanism to the present. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4270. 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. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4290. Studies 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. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4300. 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., THEO 1001, and one second-level course.*

THEO 4310. 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., THEO 1001, and one second-level course.*

THEO 4320. 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., THEO 1001, and one second-level course.*

THEO 4330. Theology of the Church

3 sem. hrs.

The Church in light of the documents, events, and charism of Vatican II. Contemporary understandings of the Church and its mission in the modern world. Special attention to post-conciliar "communion ecclesiology" and the relation of the local to the universal Church. Offered annually. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4340. 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., THEO 1001, and one second-level course.*

THEO 4350. 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. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4360. 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., THEO 1001, and one second-level course.*

THEO 4370. 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., THEO 1001, and one second-level course.*

THEO 4390. Studies 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 *Schedule of Classes*. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4400. 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., THEO 1001, and one second-level course.*

THEO 4405. 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. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4410. 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., THEO 1001, and one second-level course.*

THEO 4420. Theology, Violence and Nonviolence

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., THEO 1001, and one second-level course.*

THEO 4430. 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. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4440. 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. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4450. 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., THEO 1001, and one second-level course.*

THEO 4490. Studies in Moral Theology

3 sem. hrs.

Selected issues in contemporary moral life; selected themes from classical and contemporary writings in moral theology and Christian ethics. Topics vary, as specified in the *Schedule of Classes*. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4500. 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. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4510. 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., THEO 1001, and one second-level course.*

THEO 4520. 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. Partially funded by the Jewish Chautauqua Society. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4530. Islam: Faith and Practice

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. Islam in the West. *Prereq: Jr. stndg., THEO 1001, and one second-level course.*

THEO 4540. 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., THEO 1001, and one second-level course.*

THEO 4995. Independent Study in Theology

1-3 sem. hrs.

Prereq: Jr. stndg., THEO 1001, one second-level course, and cons. of dept. ch.

THEO 4996. Senior Experience in Theology

3 sem. hrs.

The Senior Experience requirement applies to all students who are seeking a B.A. degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq: Sr. stndg., enrolled in the Klingler College of Arts and Sciences.*

THEO 4997. Capstone Seminar 3 sem. hrs.

Exploration of a theological topic involving issues of theological method and interrelatedness of the subdisciplines of biblical, historical, systematic and moral theology. Colloquium paper demonstrating critical analysis in a specific field. Offered annually. *Prereq: Sr. stndg., THEO 1001, one second-level course, and cons. of dept. ch.*

SPECIAL PROGRAMS**ARTS AND SCIENCES (ARSC)****ARSC 1001. Introduction to Trial Advocacy 1**

0 sem. hrs.

Introduces students to analytical legal thinking, the skills required for trial advocacy, the legal system, problem solving, basic concepts of evidence, and public speaking by using the National Mock Trial Competition. Students learn by preparing to compete in the Competition. SNC/UNC grade assessment. ARSC 1002 must be completed during the same academic year.

ARSC 1002. Introduction to Trial Advocacy 2

2 sem. hrs.

Continuation of ARSC 1001. To receive credit, students must complete both ARSC 1001 and ARSC 1002 in the same academic year. Offered spring term. S/U grade assessment, partially based on work completed in ARSC 1001. *Prereq: ARSC 1001.*

ARSC 1005. Cross-Cultural Issues in Study Abroad 1 sem. hr.

Course is specifically designed to prepare students who are planning to study and intern abroad as a component of their college career. Course prepares students for the challenges involved with cross-cultural interactions and the acculturation process. Students gain the skills necessary to understand and interact with individuals from different cultural backgrounds as well as recognize themselves as cultural beings. Through interaction with staff from the Office of International Education, students obtain the skills and knowledge which are needed to maximize their study abroad, internship or international service-learning experience.

▲ARSC 1020. Major Concepts in Modern Science 1 4 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 and Sciences College Curriculum requirements, and for elementary/middle school and middle/secondary teaching certification. Does not count toward major requirements for biological sciences, chemistry, physics, and broad field science.

▲ARSC 1021. 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 1040. Career Planning and Decision-Making 1 sem. hr.

As career planning is an important step toward academic success and job satisfaction, this course is designed to help students assess their interests, skills, values, personality characteristics, investigate career possibilities, and learn how to use a wide variety of resources in their career search. Students will participate in self-discovery activities and learn about sound career decision making strategies as well as the world of work. The course stresses the value of liberal arts education and places an emphasis on exploring Arts and Sciences academic majors. This course is directed at freshmen and sophomores who are deciding a major and exploring careers.

ARSC 1050. Job Search Strategies for Arts and Sciences 1 sem. hr.

Introduces students to the fundamentals of planning and organizing job search strategies. Emphasis is placed on identification of individual goals, assessment of talents, exploration of career options, analysis of the job market, effective use of job search materials (cover letters, résumés) and tools (interviewing, career fairs, networking), and management of career direction. Stresses the value of the Arts and Sciences degree in the labor market and develops job search skills that will be useful throughout lifelong career management. Primarily for juniors and seniors.

ARSC 1953. First-Year Seminar 1-3 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. S/U grade assessment. Limited to first-year students.

ARSC 2000. Democracy, Culture and Public Policy: Africa 3 sem. hrs.

Examines the manner, culture, values and identity that shape global and domestic politics in the East Africa region. Emphasis on public policy efforts to promote democracy and advance the overall welfare of the nation. Consists of two weeks of study and travel in East Africa. Travel fees.

▲ARSC 2010. Conceptualizing Justice and Peace 3 sem. hrs.

An interdisciplinary, introductory seminar for students interested in the Interdisciplinary Minor in Justice and Peace (INJP). Students explore faith-based and secular theoretical approaches to the concepts of justice and peace, through critical discussion of relevant texts and reflective writing. *Prereq: Soph. stndg.*

▲ARSC 2970. Arts in a Democratic Society

3 sem. hrs.

Seminar on the role of the arts in a democratic society. Topics include government funding of the arts, cultural diversity and national arts policies, artists rights, and community interests, and public art. Readings of philosophers, culturally diverse writers, and political-social scientists. Experiential learning involving site visits to museums, performing arts centers, and libraries in the Washington D.C. area is integrated with readings. *Prereq: Cons. of program director, Les Aspin Center for Government.*

ARSC 3986. 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. Grade is determined by evaluation of work performance and a final written assignment. S/U grade assessment.

Prereq: Jr. stndg., 3.000 GPA, and cons. of instr.

ARSC 4952. Medieval Models Colloquium (Medieval Studies) 3 sem. hrs.

Interdisciplinary treatment of medieval topics featuring presentations by faculty of several departments. Specific topics and faculty vary.

Prereq: Second semester Fr. stndg. May be counted towards Medieval Studies Minor.

ARSC 4996. Senior Experience in Arts and Sciences 3 sem. hrs.

The Senior Experience requirement applies to all students who are seeking a B.A. degree in the Klingler College of Arts and Sciences. The goals of the Senior Experience requirement are 1) to provide an opportunity to apply one's accrued educational experience to a mature study of a given theme informed by the University's Mission; 2) to apply the skills of generating new knowledge within the standards of one's disciplinary training, and 3) to promote an appreciation for social and individual complexity, an awareness and appreciation of diversity in all its forms, and an appreciation of faith in the human experience through fully engaging a chosen topic. Topics vary annually; course descriptions are available in department offices. *Prereq: Sr. stndg., enrolled in the Klingler College of Arts and Sciences.*

INTERDISCIPLINARY PROGRAMS**INTERDISCIPLINARY MINOR IN ENVIRONMENTAL ETHICS (INEE)****INEE 4997. 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., INEE Minor, cons. of instr., and completion of three courses required for minor.*

INTERDISCIPLINARY MINOR IN ETHICS (INET)**INET 4953. Seminar for Interdisciplinary Minor in Ethics** 3 sem. hrs.

Senior seminar designed to culminate the interdisciplinary minor in ethics. Students will have the opportunity to integrate their previous studies in ethics and explore some current and perennial problems in depth, typically leading to a research paper or presentation. Topics and faculty vary. *Prereq: Cons. of dept. ch.; six courses (18 cr.) from the following areas: Ethical Theory (2 required courses): PHIL 2310 and THEO 2400 or 4400; Applied Ethics (2 req courses, at least one from PHIL): PHIL 4320, 4330, 4335, 192, THEO 4440, 4450, 4490; COMM 3900; Contemporary Interfaces with Ethics (2 req. courses): PHIL 3710, 3750, 3730, 3740, 3350, 3770, 3751, 3780; THEO 4420; MARK 157; MANA 181; COMM 4400; HEAL 131, 2100; other courses must be approved.*

INTERDISCIPLINARY MINOR IN FAMILY STUDIES (INFS)**INFS 4953. 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 2200, plus 12 additional hours from the family studies minor.*

INTERDISCIPLINARY MAJOR AND MINOR IN INTERNATIONAL AFFAIRS (INIA)**INIA 4997. 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.*

INTERDISCIPLINARY MINOR IN JUSTICE AND PEACE (INJP)**INJP 4997. Capstone Seminar in Justice and Peace** 3 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 course work in the minor. Service and experiential learning opportunities may be offered. *Prereq: Sr. stndg. and INJP minor.*

INTERDISCIPLINARY MAJOR AND MINOR IN WOMEN'S AND GENDER STUDIES (WGST)**WGST 1001. Introduction to Women's and Gender Studies** 3 sem. hrs.

Introduction to the interdisciplinary field of Women's and Gender Studies, an academic area of study focused on the ways sex and gender manifest themselves in our social, cultural, and political lives. Define and learn to use key terms and concepts such as sex, gender, sexuality, embodiment, feminism, patriarchy, etc. Course materials will include classic and contemporary scholarship from a variety of disciplines, as well as personal narratives of gendered lives. Offered every fall semester.

WGST 4997. Women's and Gender Studies Capstone Course 3 sem. hrs.

Capstone course is designed to enable upper-level students, and especially WGST majors and minors, to integrate the knowledge and experience gained in WGST courses and use that knowledge and experience as a springboard for future work. Offered every semester. *Prereq: WGST 1001 and two other WGST courses or permission of program director.*

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 within an organization. Building on this core, the curriculum provides the students an opportunity to specialize in a specific business area, such as accounting, information technology, human resources or international business. This prepares graduates for entry-level business positions — the start of their business careers.

Third, the curriculum stresses 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, ethical reasoning 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 of Management. 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, entrepreneurship, finance, human resource management, marketing, information technology, international business, operations and supply chain management, and real estate; students also may earn a major in general business. Students majoring in any of the majors offered by the College of Business Administration must be resident in that college to complete the major(s) and earn the corresponding degree. The college also offers minors to non-business students in business administration, human resources, information technology, marketing and operations and supply chain management.

All undergraduate majors and minors in the college are open to part-time degree students taking day classes. Courses also are available for credit or audit to non-degree students with the proper prerequisites. Part-time students are assigned to academic advisers in the college.

ADMISSION REQUIREMENTS

For admission requirements for the College of Business Administration see the Admissions Procedures in the University section of this bulletin.

2. BUSINESS CURRICULUM COURSES

| | |
|---|-----------|
| LEAD 1000 (Foundations for Business Leadership) | 1 |
| <i>NOTE: Students (with junior standing or higher) transferring into the college from another university are required to complete BUAD 1002 (Computer Literacy in Business) instead of LEAD 1000.</i> | |
| LEAD 2000 (Applying Business Leadership Skills) | 1 |
| LEAD 3000 (Strategies for the Future and Dealing in the Business Community) . . . | 1 |
| ACCO 2030 (Principles of Financial Accounting) | 3 |
| ACCO 2031 (Principles of Managerial Accounting) | 3 |
| ECON 3001 (Applied Business Economics) [non-ECON majors] | |
| or ECON 3003 (Intermediate Microeconomic Analysis) [ECON majors] | 3 |
| FINA 3001 (Introduction to Financial Management) | 3 |
| MANA 3001 (Behavior and Organization) | 3 |
| OSCM 3001 (Operations and Supply Chain Management) | 3 |
| MARK 3001 (Introduction to Marketing) | 3 |
| INTE 3001 (Introduction to Information Technology) [non-ACCO majors] | |
| or ACCO 4050 (Accounting Information Systems) [ACCO majors] | 3 |
| Ethical and Societal Issues – select one from: | 3 |
| MANA 3002 (Business and Its Environment) | |
| PHIL 4330 (Business Ethics) | |
| FINA 4370 (Advanced Investment Management, Ethics and Society) | |
| [AIM and IAIM students only] | |
| MANA 4101 (Strategic Management) | 3 |
| Legal and Regulatory Environment – select one from: | 3 |
| BULA 3001 (Legal Environment of Business) [ACCO majors] | |
| BULA 3040 (The Legal and Regulatory Environment of International Business) | |
| FINA 4310 (Introduction to Applied Investment Management) | |
| [AIM and IAIM students only] | |
| HURE 3001 (Management of Human Resources) [HURE majors] | |
| Total Business Curriculum Core Credits | 36 |

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, operations and supply chain management, real estate, or general business; majors in entrepreneurship and international business are second majors. Double counting of courses for two or more majors is not permitted, e.g. students can not double count FINA 4001 for both real estate and finance majors.

At least one International Business course within or outside the major field(s) in the College of Business is required.

ACCOUNTING MAJOR (33 CREDITS)

- ACCO 3001 (Intermediate Accounting)
- ACCO 4000 (Accounting Communications)
- ACCO 4010 (Individual Income Taxation)
- ACCO 4020 (Advanced Accounting 1)
- ACCO 4030 (Cost Accounting)
- BULA 4001 (Business Law)
- Three ACCO electives from: ACCO 4040, ACCO 4045, ACCO 4080, ACCO 4119, ACCO 4170, ACCO 4986 and selected graduate ACCO courses, if approved.
- Two business electives

Wisconsin and Illinois, as well as most states, require students to complete 150 semester hours, including a bachelor's degree in accounting, to qualify for the CPA exam. Many students may prefer to meet this requirement by earning a graduate degree in addition to their undergraduate degree. Marquette's accounting program offers a master of science in accounting degree which meets the 150-hour requirement. For information, consult the Graduate School of Management section of the Graduate Bulletin or contact the Department of Accounting at (414) 288-7340.

BUSINESS ECONOMICS MAJOR (27 CREDITS)

- ECON 3004 (Intermediate Macroeconomic Analysis)
- ECON 4060 (Introduction to Econometrics)
- Three 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 School of Management section of the Graduate Bulletin or contact the Department of Economics at (414) 288-7377.

ENTREPRENEURSHIP MAJOR**(15 CREDITS PLUS AN ADDITIONAL MAJOR [EXCLUDING INTERNATIONAL BUSINESS] IN THE COLLEGE)**

Students completing the entrepreneurship major must also complete another major in business. Double counting of courses for two majors is not permitted.

Specific Entrepreneurship Course Requirements (15 credits):

- ENTP 3001 (Understanding Entrepreneurship)
- ENTP 4010 (New Venture Creation)
- Three electives (with at least one of ENTP 4986 or ENTP 4020) from:
 - REAL 3001 (Principles of Commercial Real Estate Development)
 - ENTP 4020 (Consulting to Entrepreneurs)
 - ENTP 4931 (Topics in Entrepreneurship)
 - ENTP 4986 (Entrepreneurship Internship – Grading Period)
 - MANA 3034 (Negotiations and New Ventures) or
 - MANA 4010 (Motivation and Leadership)

NOTE: Other business electives may be substituted; consult Entrepreneurship Advisor.

GENERAL BUSINESS MAJOR (27 CREDITS)

- Nine upper division business electives.

FINANCE MAJOR (27 CREDITS)

Specific Finance Course Requirements:

- FINA 4001 (Advanced Financial Management)
- FINA 4011 (Investment Analysis)
- Three FINA electives from:
 - FINA 4020 (Personal Financial Planning)
 - FINA 4040 (International Finance)
 - FINA 4030 (Bank Management)
 - FINA 4060 (Introduction to Financial Derivatives)
 - FINA 4112 (Investment Management)
 - FINA 4931 (Topics in Finance)
 - FINA 4986 (Finance Internship – Grading Period)
- Four business electives

HUMAN RESOURCES MAJOR (27 CREDITS)

Specific Human Resource Course Requirements:

- Five elective courses from this list with three selected from HURE 4005, HURE 4010, HURE 4030 or HURE 4080:
 - HURE 4005 (Employee Benefit Systems)
 - HURE 4010 (Compensation of Human Resources)
 - HURE 4020 (Labor Relations and Collective Bargaining)
 - HURE 4030 (Employment of Human Resources)
 - HURE 4080 (Training and Development)
 - HURE 4931 (Topics in Human Resources)
 - HURE 4986 (Human Resources Internship – Grading Period)
 - MANA 3035 (Diversity in Organizations)
 - MANA 4010 (Motivation and Leadership)
- 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 School of Management section of the Graduate Bulletin or the director of the Master's in Human Resources program at (414) 288-3643.

INFORMATION TECHNOLOGY MAJOR (27 CREDITS)

Specific Information Technology Course Requirements:

- INTE 2051 (Business Applications Program Development)
- INTE 4052 (Data Base Management Systems)
- INTE 4158 (Systems Analysis and Design)
- Two electives from:
 - INTE 3053 (Project Management)
 - INTE 4054 (Emerging Technologies)
 - INTE 4055 (Web-based Applications)
 - INTE 4953 (Seminar in Information Technology)
 - INTE 4986 (Information Technology Internship – Grading Period)
- Four business electives

MARKETING MAJOR (27 CREDITS)

Specific Marketing Course Requirements:

- MARK 4060 (Marketing Research)
- MARK 4110 (Marketing Management)
- Three MARK electives from:
 - MARK 4006 (Business-to-business Marketing)
 - MARK 4010 (Consumer Behavior)
 - MARK 4020 (Integrated Marketing Communications)
 - MARK 4040 (International Marketing)
 - MARK 4051 (Direct Marketing)
 - MARK 4070 (Marketing and Society)
 - MARK 4080 (Product and Pricing Strategy)
 - MARK 4085 (Marketing Logistics and Distribution Strategy)
 - MARK 4094 (Sales Management)
 - MARK 4095 (Retailing Management)
 - MARK 4931 (Topics in Marketing)
 - MARK 4986 (Marketing Internship – Grading Period)
- Four business electives

OPERATIONS AND SUPPLY CHAIN MANAGEMENT MAJOR (27 CREDITS)

Specific Operations and Supply Chain Management Requirements:

- OSCM 4010 (Manufacturing Management)
- OSCM 4030 (Logistics and Purchasing Management)
- Two electives from:
 - OSCM 4015 (Service Management)
 - OSCM 4020 (Supply Chain Strategy and Practice)
 - OSCM 4931 (Topics in Operations and Supply Chain Management)
(may be counted only once in this area)

- One elective from:
 - INTE 4052 (Data Base Management Systems)
 - MANA 4040 (International Management)
 - OSCM 4060 (Decision Modeling in Operations and Supply Chain Management)
 - OSCM 4986 (Operations and Supply Chain Management Internship – Grading Period)
 An additional course from the list above (OSCM 4015, 4020, or 4931-second topic)
- Four Business Electives

REAL ESTATE MAJOR (27 CREDITS)

Specific Real Estate Course Requirements:

- REAL 3001 (Principles of Commercial Real Estate Development)
- REAL 4002 (Commercial Real Estate Finance)
- Three electives (with at least one of REAL 4110 or REAL 4120) from:
 - REAL 4110 (Commercial Real Estate Valuation)
 - REAL 4120 (Cases in Commercial Real Estate)
 - REAL 4931 (Topics in Real Estate)
 - REAL 4986 (Real Estate Internship – Grading Period)
 - FINA 4011 (Investment Analysis) or FINA 4001 (Advanced Financial Management)
 - ENTP 4010 (New Venture Creation) or
 - MANA 3034 (Negotiations and New Ventures)
 - ECON 4012 (Urban Economics)
 - MARK 4060 (Marketing Research)
 - ACCO 4080 (Analysis of Corporate Financial Statements)
- Four business electives

INTERNATIONAL BUSINESS

(12 CREDITS PLUS AN ADDITIONAL MAJOR [EXCLUDING ENTREPRENEURSHIP] IN THE COLLEGE)

Students completing the international business major must also complete another major in business. Double counting of courses for two majors is not permitted.

- Required Courses (12 credits)
 - Select four electives from:
 - ECON 4042 (International Antitrust and Competition Policy)
 - ECON 4044 (International Currency Markets)
 - ECON 4045 (Comparative Economic Development)
 - ECON 4046 (International Trade)
 - ECON 4048 (The Russian Economy)
 - BULA 3040 (The Legal and Regulatory Environment of International Business)
 - ACCO 4040 (International Accounting)
 - ACCO 4045 (International Taxation)
 - FINA 4040 (International Finance)
 - MANA 4040 (International Management)
 - MARK 4040 (International Marketing)
 - INBU 4141 (International Business Strategy)
 - INBU 4953 (Seminar in International Business)
 - INBU 4986 (International Business Internship – Grading Period)

One of the four electives above must be either ECON 4044 or ECON 4046.

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 (3001 and another upper division elective) in Arabic, Chinese, French, German, Japanese, Italian, or Spanish; or (2) if passing a reading, writing, speaking, and listening working competency test in a foreign language taught at Marquette University as endorsed by the Department of Foreign Languages and Literatures. Permission to take this competency test is granted by the director of International Business Studies.
 - Note: Foreign students whose native language is not English may have the language competency requirement waived subject to the approval of the director of International Business Studies.
- Study or Work Abroad
 - Completion of a work or study abroad summer or term program is required. (NOTE: A term or academic year abroad may result in more than eight terms needed to com-

plete the business degree.) Approval of the study/work abroad experience is subject to prior, written approval by the director of International Business Studies or IAIM programs

APPLIED INVESTMENT MANAGEMENT (AIM) PROGRAM

Marquette is home to one of the nation's top undergraduate programs in applied investment management. The AIM program allows a select group of finance majors to get hands-on academic and security analysis experience, including summer internships and an opportunity to actively manage an equity and fixed-income portfolio throughout their senior year. Students will study the core body of knowledge covered in the Chartered Financial Analyst (CFA®) Level I exam — preparing them to take the test upon graduation — and begin a career in the money management industry.

The International Applied Investment Management (IAIM) program combines an International Business major with the AIM program with a goal of producing proficient and ethical research analysts with a global focus. The IAIM program provides the opportunity for a select number of double majors in international business and finance or accounting to receive the academic and practical experience in security analysis with an international concentration. Students are required to have a summer internship in an international setting and will actively manage a portfolio of global-fixed income and equity securities during their senior year. With their AIM cohorts, these select students will study the core body of knowledge covered in the CFA® Level I exam that will prepare them to take the test upon graduation.

Students apply to the AIM program during the fall semester of their junior year and notification of acceptance occurs prior to the end of the semester. Acceptance into these programs is limited and based on:

- Grades earned to date of application (GPA > 3.000)
- Resume and references
- Essay
- Interview

Interviews for the summer internships will begin after acceptance into the program.

Academic Expectations for AIM Students

- a. Students accepted into the AIM program must earn a B or better (no withdrawals allowed) in the following courses: **
 - ACCO 3001: Intermediate Accounting
 - ACCO 4080: Analysis of Corporate Financial Statements
 - FINA 3001: Introduction to Financial Management
 - FINA 4001: Advanced Financial Management
 - FINA 4011: Investment Analysis
 - FINA 4310: Introduction to Applied Investment Analysis
 - FINA 4320: Research and Financial Analysis
 - FINA 4330: Valuation and Portfolio Management
 - FINA 4370: Advanced Investment Management Ethics and Society
 - FINA 4931: Topics in Finance
 - One elective from: FINA 4060, FINA 4112, FINA 4931 (Topics in Finance), ECON 4060, ACCO 4020
 - One elective from ACCO 4040, ECON 4044, and FINA 4040
- b. Students in the IAIM program must earn a B or better (no withdrawals allowed) in the following courses beyond those listed in (a.):
 - ECON 4044: International Currency Markets (may also count for elective above)
 - Three International Business electives
- c. All students in the AIM and IAIM program must complete an internship in the summer between the junior and senior years. If the student wishes to earn credit they may register for the appropriate international course (FINA 4986 or INBU 4986). Students in the IAIM program must also meet the language proficiency and study abroad components of international business majors.
- d. Have an overall cumulative 3.000 grade point average at the end of the second semester of their junior year and a cumulative 3.250 grade point average at the end of the first semester of their senior year for all College of Business classes.
- e. Carry a typical course load of 15-18 credit hours per semester.
- f. Failure to meet academic standards in any semester will result in student being dropped from AIM or IAIM programs. The decision to drop a student from the AIM or IAIM programs is at the sole discretion of the AIM Director.

g. Any appeal of the decision to be dropped from the program must begin with the AIM Director. The decision of the Finance Chair can be appealed to the Associate Dean of the College of Business Administration. Finally, the student may appeal the decision to the Dean of the College of Business Administration. The dean's decision will be final. If a resolution cannot be reached, the department chairperson must be contacted with a written appeal.

h. If at any time a student leaves or is dropped from AIM or IAIM programs, all credits earned at that point will be counted towards the finance and/or International Business majors.

For more information, including the specific curriculum and expectations for accounting majors in the AIM and IAIM programs, contact the AIM Director, Dr. David Krause at (414) 288-1457 or AIM@marquette.edu.

5. GRADUATION REQUIREMENTS

- a. A minimum total hours of 128.
- b. A minimum GPA of 2.000 must be earned in all courses taken at Marquette University.
- c. A minimum GPA of 2.000 must be earned in all College of Business Administration courses taken at Marquette University. (2.500 for accounting majors). A grade of C or higher must be earned in each of a student's major courses including the core courses introducing the major. For international business majors, a grade of C or better must be earned in required language courses beyond either 4 or 10.
- d. At least one International Business elective must be completed.
- e. At least 50 percent of the business credit hours required for the business degree must be taken at Marquette University.
- f. 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.
- g. If a student has 128 or more credits, has an overall GPA of 2.000 or higher, has an overall college GPA of 2.000 or higher (2.500 for accounting majors), but does not achieve a C or better in each of their major courses including the core course introducing the major, the student will be conferred a BSBA degree in general business. If the student meets the overall and college minimum GPA and complete enough credits, but while attempting 2 or more majors, achieves a C or better in all courses for one major but not in another major, the student will be conferred a BSBA degree with a major in the former but not the latter.
- h. 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 |
|------------------|--|
| BUAD 1002 | Computer Literacy in Business 0 |
| ACCO 2030 | Principles of Financial Accounting 3 |
| ACCO 2031 | Principles of Managerial Accounting 3 |
| ECON 2003 | Principles of Microeconomics 3 |
| ECON 2004 | Principles of Macroeconomics 3 |
| MANA 2028 | Business Statistics ^a 3 |
| FINA 3001 | Introduction to Financial Management 3 |
| MANA 3001 | Behavior and Organization 3 |
| MARK 3001 | Introduction to Marketing 3 |
| | TOTAL 24 |

^a MATH 1700, MATH 4720 or PSYC 2001 may be substituted.

- A C grade or better must be earned in each course except BUAD 1002; student must earn a passing grade (SNC) in BUAD 1002.
- All minor courses must be taken at Marquette; the Assistant Dean in the College of Business Administration must approve any transfer of credits.

- Undergraduate students outside the College of Business Administration should limit their enrollment in business courses (excluding ECON 2003 and 2004) to no more than 25 percent of the total credit hours applied to their degree programs.

MINOR IN HUMAN RESOURCES

| REQUIRED COURSES | CREDITS |
|------------------|---|
| ACCO 2030 | Principles of Financial Accounting 3 |
| ECON 2003 | Principles of Microeconomics 3 |
| MANA 2028 | Business Statistics ^a 3 |
| HURE 3001 | Management of Human Resources 3 |
| MANA electives | Human Resources Management Electives ^b . . . 9 |
| | TOTAL 21 |

a MATH 1700, MATH 4720, PSYC 2001 or SOCI 2060 may be substituted.

b Three courses selected from MANA 3035 or 3001, HURE 4005, HURE 4010, HURE 4020, HURE 4030, HURE 4080, HURE 4931 or ECON 4020.

- A C grade or better must be earned in each course.
- All minor courses must be taken at Marquette; the Assistant Dean in the College of Business Administration must approve any transfer of credits.

The College of Business Administration offers a special five-year program, which enables students to earn a minor in human resources as part of their undergraduate degree and a master of science in human resources (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 INFORMATION TECHNOLOGY

| REQUIRED COURSES | CREDITS |
|--------------------------|--|
| ACCO 2030 | Principles of Financial Accounting 3 |
| ECON 2003 | Principles of Microeconomics 3 |
| MANA 2028 | Business Statistics ^a 3 |
| INTE 3001 | Introduction to Information Technology 3 |
| INTE 4052 | Database Management Systems 3 |
| INTE 4158 | Systems Analysis and Design 3 |
| IT elective ^b | 3 |
| | TOTAL 21 |

a MATH 1700, MATH 4720, PSYC 2001 or SOCI 2060 may be substituted.

b One course selected from INTE 2051, 3053, 4054, 4055 or 4953.

- A C grade or better must be earned in each course.
- All minor courses must be taken at Marquette; the Assistant Dean in the College of Business Administration must approve any transfer of credits.

MINOR IN MARKETING

| REQUIRED COURSES | CREDITS |
|------------------|--|
| ECON 2003 | Principles of Microeconomics 3 |
| MANA 2028 | Business Statistics ^a 3 |
| MARK 3001 | Introduction to Marketing 3 |
| MARK 4060 | Marketing Research 3 |
| MARK electives | Marketing Electives 9 |
| | TOTAL 21 |

a MATH 1700, MATH 4720 or PSYC 2001 may be substituted.

- A C grade or better must be earned in each course.
- All minor courses must be taken at Marquette; the Assistant Dean in the College of Business Administration must approve any transfer of credits.

MINOR IN OPERATIONS AND SUPPLY CHAIN MANAGEMENT

| REQUIRED COURSES | CREDITS |
|------------------|--|
| ACCO 2030 | Principles of Financial Accounting 3 |
| ECON 2003 | Principles of Microeconomics 3 |
| MANA 2028 | Business Statistics ^a 3 |
| OSCM 3001 | Operations and Supply Chain Management . . 3 |
| MANA electives | Supply Chain Management Electives ^b 9 |
| | TOTAL 21 |

a MEEN 2426, MATH 1700, MATH 4720, PSYC 2001 or SOCI 2060 may be substituted.

b Three courses selected from OSCM 4010, OSCM 4015, OSCM 4020, OSCM 4030 or OSCM 4931.

- A C grade or better must be earned in each course.
- All minor courses must be taken at Marquette; the Assistant Dean in the College of Business Administration must approve any transfer of credits.

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 encouraged to declare a major prior to registration for the junior year. All students should declare their major(s) prior to advising and registration for the senior year. All students must file applications for graduation in the main office one term prior to the term of intended graduation.

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.")

CR/NC OPTION

For enrichment purposes, junior and senior students are given an option to elect one course per term (to a maximum of four courses) for which only an CR or NC grade is assigned. Quality of C or higher achievement must be maintained if a grade of CR is to be assigned.

Eligible courses include only non-business electives which are not used to satisfy non-business core requirements. Courses for a minor or major cannot be taken under the CR/NC option. No business course may be taken under the CR/NC Option by a business administration student if the student wishes that course to fulfill a graduation requirement for either number of hours or as a required course for the core or major. LEAD, BUAD and internship grading courses are graded using the S and U grades and do not fall within the CR/NC Option.

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 2030 and ACCO 2031 prior to enrolling in ACCO 3001.

GRADE APPEALS AND POLICY PROCEDURES

The college adheres to university policy on grade appeals. Any appeal *must* begin with the instructor who assigned the grade. If a resolution cannot be reached, the department chairperson must be contacted with a written appeal. Information concerning subsequent steps can be obtained from the assistant dean of undergraduate programs or the associate dean. To appeal a WA grade, contact the Executive Associate Dean of the College of Business Administration in writing within 5 business days of this notification.

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 (4995) is to provide an independent, directed-study experience for the qualified student. To qualify, a student must have attained senior standing, have a minimum 2.500 grade point average overall and a 3.000 grade point average in the major area or topic of which the independent study will be in. Independent study courses are not available for those courses in the same term when the course is being offered. The appropriate use of an independent study course is to allow the further pursuit of topics and issues presented in a course and/or a legitimate course of study for which no regularly scheduled course is presently offered. Obtaining permission and approval for a 4995 is contingent on the approval of the research proposal, the willingness of a specific faculty member to accept the student's proposal, and that faculty member's willingness to work with the student for the duration of the course. All 4995s 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 educa-

tion 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 19 credit hours per term.

Request for permission to exceed 19 credit hours must be submitted in writing to the assistant dean prior to registration.

GRADUATION

All graduates are expected to complete the Senior Exit Survey prior to their graduation. All May graduates are required to attend the university and college commencement ceremonies.

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 grade point average of 2.500 overall, (3.000 in FINA and ACCO) are eligible to participate in the internship program. Credit is granted based on hours worked and the educational content of a particular offering.

Interns are full-time students whether at school or at work. When at work the intern is subject to the rules of the company and is under its direct supervision. Wages 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
- Entrepreneurship
- Finance
- Human Resource Management
- Information Technology
- International Business
- Marketing
- Operations and Supply Chain Management
- Real Estate

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

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

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 2012, 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 GPA 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 2011). 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 128 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, some scholarship funds 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 GPA of 3.000 or better. Applications must be filed in the main office by the end of the spring semester 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. 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.

OMICRON DELTA EPSILON

Omicron Delta Epsilon is the international honor society in economics serving to recognize scholastic attainment and honoring outstanding achievement in economics. The society is one of the world's largest academic honor societies. The Marquette chapter was founded in 1981.

PROFESSIONAL FRATERNITIES

Students in the College of Business Administration are eligible to join the following professional fraternities on campus: Psi Chapter of Beta Alpha Psi, national accounting fraternity, and Delta Sigma Pi, the international professional commerce fraternity and Alpha Kappa Psi, a business fraternity.

PROFESSIONAL SOCIETIES

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.

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.

GO-GETTERS (GG)

The vision of the Go-Getters is to maximize business students' career potential by bringing in speakers, sponsoring seminars and workshops, touring companies, and one-on-one counseling sessions dealing with various aspects of career management. The members are eager to identify, pursue and earn a career opportunity with their number one choice of an employer.

HUMAN RESOURCES MANAGEMENT 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 BUSINESS STUDENT ASSOCIATION (IBSA)

The International Business Student Association (IBSA) provides a forum for all Marquette University students to learn about international business (IB) events, developments and activities on campus and in the business community. IBSA holds information meetings, IB-leader-guest-speaker series, and provides other IB related academic and professional career development and networking opportunities.

MULTICULTURAL BUSINESS ORGANIZATION (MBO)

The Multicultural Business Organization was established to support business students from diverse backgrounds in their pursuit of a successful academic career by raising awareness of and accessibility to resources within the university for developing and reaching their professional goals. Additionally, the MBO offers programming to enhance cross-cultural understanding of all Marquette students.

OPERATIONS AND SUPPLY CHAIN MANAGEMENT ASSOCIATION (OSCM)

The Operations and Supply Chain Management Association is a professional organization made up of individuals who practice and preach the art and science of Operations and Supply Chain Management. Students interact with local professionals by attending dinner meetings, plant tours, technical sessions, and other related activities.

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

TYPICAL FOUR-YEAR SCHEDULE

FOR ALL BUSINESS MAJORS (except Accounting)

| <i>Freshman</i> | | | |
|---------------------------------------|-----------|---------------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| LEAD 1000 | 3 | ENGL 1002 | 3 |
| ENGL 1001 | 3 | MATH 1400 | 3 |
| MATH 1390 | 3 | PHIL 1001 | 3 |
| THEO 1001 | 3 | HIST or SCIENCE elective | 3 |
| HIST or SCIENCE elective | 3 | Non Business Elective #2 ^C | 3 |
| Non Business Elective #1 ^C | 3 | | |
| TOTAL | 16 | TOTAL | 15 |

| <i>Sophomore</i> | | | |
|---|-----------|---------------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| LEAD 2000 | 1 | ACCO 2031 | 3 |
| MANA 2028 or THEO elective | 3 | ECON 2004 | 3 |
| ACCO 2030 | 3 | PHIL 2310 or Literature elective | 3 |
| ECON 2003 | 3 | Non Business Elective #4 ^C | 3 |
| PHIL 2310 or Literature elective ^C | 3 | MANA 2028 or THEO elective | 3 |
| Non Business Elective #3 ^C | 3 | CMST 2300 ^A | 2 |
| TOTAL | 16 | TOTAL | 17 |

| <i>Junior</i> | | | |
|--|-----------|---|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| LEAD 3000 | 1 | MANA 3001 ^B | 3 |
| FINA 3001 ^B | 3 | Business Elective #1 ^D | 3 |
| MARK 3001 ^B | 3 | Business Elective #2 ^D | 3 |
| OSCM 3001 ^B | 3 | DIVERSE CULTURE elective ^B | 3 |
| INTE 3001 ^B | 3 | Non Business Elective #5 ^C | 3 |
| ECON 3001 ^B (if ECON major, replace with ECON 3003) | 3 | Legal/Reg. Elective ^B (Select from BULA 3001, BULA 3040, FINA 4310 or HURE 3001; HR majors must select HURE 3001.) | 3 |
| TOTAL | 16 | TOTAL | 18 |

| <i>Senior</i> | | | |
|--|-----------|-----------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| Business Elective #3 ^D | 3 | Business Elective #6 ^D | 3 |
| Business Elective #4 ^D | 3 | Business Elective #7 ^D | 3 |
| Business Elective #5 ^D | 3 | Business Elective #8 ^D | 3 |
| MANA 3002/PHIL 4330/FINA 4370 ^A | 3 | Business Elective #9 ^D | 3 |
| Non Business Elective #6 ^C | 3 | MANA 4101 ^A | 3 |
| TOTAL | 15 | TOTAL | 15 |

A Assuming prerequisites are met, course can be taken in either fall or spring semester of the respective year.

B Assuming prerequisites are met, course can be taken either semester of junior year.

C If international business major, this should be foreign language.

D One business elective must be an international business course.

TYPICAL FOUR-YEAR SCHEDULE

FOR ACCOUNTING MAJORS

| <i>Freshman</i> | | | |
|---|-----------|---|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| LEAD 1000 | 1 | ENGL 1002 | 3 |
| ENGL 1001 | 3 | MATH 1400 | 3 |
| MATH 1390 | 3 | PHIL 1001 | 3 |
| THEO 1001 | 3 | HIST or SCIENCE elective | 3 |
| HIST or SCIENCE elective | 3 | Non Business Elective #2 ^C | 3 |
| Non Business Elective #1 ^C | 3 | | |
| | 16 | TOTAL | 15 |

| <i>Sophomore</i> | | | |
|---|-----------|---|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| LEAD 2000 | 1 | ACCO 2031 | 3 |
| MANA 2028 or THEO elective | 3 | ECON 2004 | 3 |
| ACCO 2030 | 3 | PHIL 2310 or Literature elective | 3 |
| ECON 2003 | 3 | Non Business Elective #4 ^C | 3 |
| PHIL 2310 or Literature elective ^C | 3 | MANA 2028 or THEO elective | 3 |
| Non Business Elective #3 ^C | 3 | CMST 2300 ^A | 2 |
| | 16 | TOTAL | 17 |

| <i>Junior</i> | | | |
|------------------------------|-----------|------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| LEAD 3000 | 1 | MANA 3001 ^B | 3 |
| FINA 3001 ^B | 3 | ACCO 4020 | 3 |
| ACCO 3001 | 3 | BULA 4001 | 3 |
| BULA 3001 | 3 | ACCO 4000 | 3 |
| OSCM 3001 ^B | 3 | ECON 3001 ^B | 3 |
| MARK 3001 ^B | 3 | ACCO 4050 | 3 |
| | 16 | TOTAL | 18 |

| <i>Senior</i> | | | |
|--|-----------|---|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| ACCO 4010 | 3 | DIVERSE CULTURE elective ^B | 3 |
| ACCO elective ^D | 3 | ACCO 4030 | 3 |
| MANA 3002 / PHIL 4330 ^A | 3 | MANA 4101 ^A | 3 |
| ACCO elective ^D | 3 | ACCO elective ^D | 3 |
| Business Elective #1 ^D | 3 | Business Elective #2 ^D | 3 |
| | 15 | TOTAL | 15 |

A Assuming prerequisites are met, course can be taken in either fall or spring semester of the respective year.

B Assuming prerequisites are met, course can be taken either semester of junior year.

C If international business major, this should be foreign language.

D One business or accounting elective must be an international business course. The business electives may be fulfilled with courses for another business major.

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 128 credit hours normally required for graduation are necessary. Also, military and naval science courses will fulfill the 12–18 credit requirement of non-business electives.

COURSE DESCRIPTIONS

ACCOUNTING (ACCO)

Chairperson and Professor: Akers

Professor: Giacomino

Professor Emeritus: Doney, Probst

Associate Professor: Naples, Trebby, Yahr

Assistant Professor: Ling, Mascha

Adjunct Assistant Professor: Dole

Adjunct Instructor: C. Gruber, Kren

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 2030. 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 2031. 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 2030; computer literacy.

ACCO 3001. 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 2031; computer literacy.

ACCO 3005. Advanced Accounting for Managerial Decisions 3 sem. hrs.

Course is designed for students specializing in finance and other non-accounting majors who wish to study accounting above the principles level. Emphasizes topics from intermediate (3001) and advanced (4020) accounting from a managerial perspective, including: the income statement, current assets and liabilities, pensions, leases, stockholders' equity and other selected issues. Although by necessity some procedural issues are covered,

the major focus is upon how financial accounting requirements can and do affect business decisions. *Prereq:* Jr. stndg. and ACCO 2031.

ACCO 3986. Internship Work Period 0 sem. hrs. SNC/UNC grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.

ACCO 4000. 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 3001.

ACCO 4010. 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 3001.

ACCO 4020. 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 3001.

ACCO 4030. 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 3001.

ACCO 4040. International Accounting 3 sem. hrs.

An overview of managerial and financial accounting issues faced by multinational corporations or firms involved in international business. Issues include the diversity of worldwide accounting principles and the prospects for uniform international accounting standards, foreign currency transactions and translation, inflation, various technical accounting methods and the implications of their application, financial disclosures, analysis of financial statements, auditing, investment analysis, risk management, management information systems, performance evaluation, methods of financing transfer pricing, and taxation. *Prereq:* ACCO 2031

ACCO 4045. International Taxation 3 sem. hrs.

U.S. Taxation of international transactions and foreign taxpayers. A study of the U.S. and foreign taxation of international commercial transactions involving U.S. and foreign taxpayers, including the taxation of income of U.S. taxpayers operating abroad through branches and subsidiaries; the U.S. foreign tax credit provisions; cross-border asset transfers and related intercompany pricing issues; the U.S. taxation of non-resident individuals, partnerships, associations and foreign corporations; and bilateral and multilateral income tax treaties. *Prereq:* ACCO 4010

ACCO 4050. Accounting Information Systems 3 sem. hrs.

Substantial hands-on involvement in computing capabilities which enable accountants to be more productive and to provide better service to clients and management. Applications in cost behavior, cost analysis, cost estimating, cost allocations, budgeting, profit planning, capital budgeting, and expert systems. Examination of various approaches to the computerization of transaction processing cycle, using suitable software package, with special emphasis on the problems of internal control. EDP auditing and the accountant's role in the systems development cycle. *Prereq:* ACCO 3001

ACCO 4080. Analysis of Corporate Financial Statements 3 sem. hrs.

Provides experience in reading, interpreting, and analyzing corporate financial statements. Specific attention is given to the evaluation methods necessary to assess a firm's short-term liquidity, long-term solvency funds flows, capital structure, return on investment, operating performance, and asset utilization. Effects of alternative accounting methods and footnote disclosures. *Prereq:* Sr. stndg. and ACCO major; or Sr. stndg. and FINA major

ACCO 4119. Tax Research 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 4010.

ACCO 4170. Auditing 3 sem. hrs.

Focuses on major issues in auditing and the recent pronouncements of authoritative bodies. Specific attention is given to the profession code of conduct, legal liability, study and evaluation of the internal control structure, EDP systems, statistical sampling and reporting responsibilities for attest and non attest engagements. *Prereq:* ACCO 4050.

ACCO 4931. Topics in Accounting 3 sem. hrs. Prereq: ACCO 3001

ACCO 4953. Seminar in Accounting 3 sem. hrs. Prereq: ACCO 3001.

ACCO 4986. Accounting Internship – Grading Period 3 sem. hrs.

S/U grade assessment. *Prereq:* Jr. stndg., cons. of prog. dir. and cons. of internship dir.

ACCO 4995. Independent Study in Accounting 1-4 sem. hrs.

Prereq: Cons. of dept. ch.

BUSINESS LAW COURSES (BULA)

BULA 3001. 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 3040. 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.*

BULA 4001. 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 3001.*

BULA 4931. Topics in Business Law 3 sem. hrs. *Prereq: BULA 3001*

BULA 4953. Seminar in Business Law 3 sem. hrs. *Prereq: BULA 3001.*

BULA 4995. Independent Study in Business Law 1-4 sem. hrs. *Prereq: Consent of department chair.*

ECONOMICS (ECON)

Chairperson and Professor: Clark
Professor: Brush, Chowdhury, Daniels, Davis, Nourzad
Professor Emeritus: Smiley
Associate Professor: Breeden, Crane, McGibany, Toumanoff
Assistant Professor: Wang, Yakusheva
Visiting Assistant Professor: Kohls
Adjunct Assistant Professor: Lephart

▲ECON 1001. 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 2003. 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 2004. 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 2003.*

ECON 3001. 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 3001 and ECON 3003 for credit. *Prereq: ECON 2003 and ECON 2004 and MANA 2028 or equiv.*

ECON 3003. Intermediate 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 2003, ECON 2004, and MATH 1400 or equiv. Students may not take both ECON 3001 and ECON 3003 for credit.*

ECON 3004. Intermediate Macroeconomic Analysis 3 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 2003 and ECON 2004 and MATH 1400 or equiv.*

ECON 3986. Internship Work Period 0 sem. hrs. SNC/JNC grade assessment. *Prereq: Jr. standing, cons. of prog. dir. and cons. of internship dir.*

ECON 4006. 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 2003 and ECON 2004.

ECON 4008. 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 2003 and ECON 2004

ECON 4010. 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 2003 and ECON 2004.*

ECON 4012. 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 2003 and ECON 2004.

ECON 4016. 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 2003 and ECON 2004.

ECON 4020. 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 2003 and ECON 2004.

ECON 4040. 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 2003 and ECON 2004. Credit not given if ECON 4044 or ECON 4046 has already been completed for credit.

ECON 4042. International Antitrust and Competition Policy 3 sem. hrs.

Examines the economics of Antitrust or Competition Policy in an international context. Through readings, lectures, and class discussions it explores the economic rationale for Antitrust Policy, and examines the major topical areas that receive policy attention. Coverage includes a comparative survey of the policy approaches pursued by several major countries/economies, along with discussion of the conflicts and coordination issues that arise in a world characterized by extensive global trade.

Prereq: ECON 2003 and ECON 2004.

ECON 4044. International Currency Markets
3 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 2003 and ECON 2004.

ECON 4045. 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 2003 and ECON 2004.

ECON 4046. 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 2003 and ECON 2004.

ECON 4048. The Russian Economy 3 sem. hrs.

Examines the development of the Russian economy, from the origin of the Muscovite state in 1462 to the present post communist state. Common elements as well as idiosyncratic peculiarities of each period are studied. Particular attention is paid to the Soviet Communist era, including examination of Lenin's New Economic Policy, Stalin's collectivization and creation of a planned economy, the Soviet experience in World War II, the gradual stagnation and decline of Soviet economic power beginning in 1965, and the end-game of Soviet communism engineered by Gorbachev from 1985 to 1991. The course concludes with a careful examination of the post communist transition and prospects for the future of Russia's economy.

Prereq: ECON 2003 and ECON 2004

ECON 4060. Introduction to Econometrics
3 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 2003 and ECON 2004 and MATH 1700 or equiv.; or ECON 2003 and ECON 2004 and MANA 2028 or equiv.*

ECON 4065. Introduction to Mathematical Economics 3 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 2003 and ECON 2004 and MATH 1390 or equiv.; and MATH 1400 or equiv.*

ECON 4070. 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 2003 and ECON 2004 and PHIL 2310.

ECON 4075. The Economics of Religion
3 sem. hrs.

Explores how the tools of modern economic analysis, theoretical and empirical, can be used to better understand issues central to religious behavior and participation. Hence, the primary objective is to gain a better understanding of the breadth and application of economic concepts (the student learned in principles and intermediate courses) using the markets for religion as a vehicle for analysis. The secondary objective is to better understand the functioning of the religious markets: Why do individuals allocate time and money to religious activities? How do they determine the allocation between the two? Why are there so many denominations in the United States? Why are some churches very large and others very small? Why do predominately Protestant nations grow faster than predominately Catholic nations? How does religious participation affect individual attitudes toward trust, trade and immigration? *Prereq: ECON 2003 and ECON 2004*

ECON 4080. Money, Banking, and Monetary Policy 3 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 2003 and ECON 2004.*

ECON 4931. Topics in Economics 3 sem. hrs.

Prereq: Jr. stndg and ECON 2003 and ECON 2004.

ECON 4953. Seminar in Economics 3 sem. hrs.

Prereq: Jr. stndg. and ECON 2003 and ECON 2004.

ECON 4986. Economics Internship – Grading Period 3 sem. hrs.

S/U grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

ECON 4995. Independent Study in Economics 1-4 sem. hrs.

Prereq: Cons. of dept. ch.

ECON 4999. 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: Peck

Professor: Eppli

Associate Professor: Hunter, Kutner

Assistant Professor: Arena, Braga-Alves, DeWally, Pennington-Cross

Adjunct Assistant Professor: Krause

FINA 3001. Introduction to Financial Management 3 sem. hrs.

Principles and methods of corporate finance, valuation, analysis and management. Evaluation of business projects (capital budgeting) using financial criteria and different financing choices (capital structure) for these projects will be reviewed. Introduction to the financial markets and both investment and financing instruments available to corporations and individuals. Emphasis placed on the framework and methodology involved in financial decision making.

Prereq: Jr. stndg., ACCO 2031 and MANA 2028.

FINA 3986. Internship Work Period 0 sem. hrs.

SNC/UNC grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

FINA 4001. 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 3001.

FINA 4011. 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 3001.

FINA 4020. Financial Planning 3 sem. hrs.

Introduction to the framework and tools for preparing personal financial plans as a career path in the financial services industry. Topics covered include major asset purchases, managing liabilities, determining insurance needs, developing investment portfolios, tax strategies, retirement plans, and estate planning. Course also covers professional ethical standards. *Prereq: FINA 3001.*

FINA 4030. Bank Management 3 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 3001.

FINA 4040. 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 3001.

FINA 4060. 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 3001.*

FINA 4080. Entrepreneurial Finance 3 sem. hrs.

Focuses on the financial aspects of entrepreneurship, from the first decision as to whether or not to undertake an activity, to projecting financial needs, reviewing the trade-offs between alternative financing choices, to harvesting. Topics will include but are not limited to: bootstrapping, the role of angel investors, private placements, venture capital, banking options, commercial financing, public offers (IPOs, PIPES), factoring, franchising, and joint ventures. *Prereq: FINA 3001.*

FINA 4112. Investment Management

3 sem. hrs.

Extends the concepts introduced in FINA 4011. Topical coverage includes modern portfolio theory, options, futures and hedging techniques. Emphasis of course is on application of the concepts to investment strategies. *Prereq: FINA 4011.*

FINA 4310. Introduction to Applied Investment Management 3 sem. hrs.

In this introductory course, the first of four required Applied Investment Management program classes, students will study securities law, regulatory issues, and the basic mechanics of investment research analysis. Students will learn how to access and utilize a variety of sources of corporate and securities information, including the Securities and Exchange Commission's database (EDGAR) of disclosure documents that public companies are required to file. The course is also intended to prepare students for their full time summer investment internship. Class laboratory required.

Prereq: FINA 3001; FINA 4011, ACCO 3001, and ACCO 4080, which may be taken concurrently. Only open to students accepted into the AIM program.

FINA 4320. Research and Financial Analysis 3 sem. hrs.

This course provides students an understanding of various portfolio objectives and policies, as well as an appreciation of different investment strategies and styles. Building on the concepts learned in FINA 4011, students will apply their understanding of key investment tools-quantitative research methods, economic relationships, and financial statement analysis. During this course students will analyze and manage an equity and fixed income portfolio. Class laboratory required. *Prereq: FINA 4310; and FINA 4001, which may be taken concurrently. Only open to students accepted into the AIM program.*

FINA 4330. Valuation and Portfolio Management 3 sem. hrs.

This third required course in the AIM program includes the common approaches to valuing assets, the basic measurements of risk and return, and the key elements of the portfolio management process. Students will continue to manage an investment portfolio, evaluate performance, and prepare reports on the results at the end of the semester. The course will also include a professional lecture series, where investment practitioners discuss their own invest-

ment philosophies, strategies, and experiences. Class laboratory required. *Prereq: FINA 4320 and FINA 4112, which may be taken concurrently. Only open to students accepted into the AIM program.*

FINA 4370. Advanced Investment Management, Ethics and Society 3 sem. hrs.

In the final course in the AIM program, students will learn how to manage investments in a manner that is both ethical and socially responsible. Students will acquire a thorough understanding of the Chartered Financial Analyst® professional standards of conduct in the application of ethics to the moral dimensions of money management. Students also will be exposed to the strategies and performance of investment funds that are socially responsible. In doing so, students will consider such issues as discrimination and affirmative action in the workplace, economic justice, and environmental impact, among others, in the evaluation of companies for inclusion in a socially responsible fund. *Prereq: FINA 4330, FINA 4060, and FINA 4931 (Fixed Income Securities), which may be taken concurrently. Only open to students accepted into the AIM program.*

FINA 4931. Topics in Finance 2-3 sem. hrs.

Prereq: FINA 3001.

FINA 4953. Seminar in Finance 3 sem. hrs.

Prereq: FINA 3001.

FINA 4986. Finance Internship – Grading Period 3 sem. hrs.

S/U grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

FINA 4995. Independent Study in Finance

1-4 sem. hrs.

Prereq: Cons. of dept. ch.

Real Estate (REAL)

REAL 3001. Principles of Commercial Real Estate Development 3 sem. hrs.

Provides the student with an introductory knowledge of the real estate development process. The course focuses on the physical and analytical tools necessary in the real estate development process including: finding the development opportunity, land acquisition/site analysis, building design and public approvals, legal, market analysis, project management, construction, leasing, and financing. Throughout the course a simple real estate development feasibility process is followed to assess the viability of a development at different stages of the development process.

Prereq: ACCO 2031 and ECON 2004.

REAL 3986. Internship Work Period 0 sem. hrs.

SNC/UNC grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

REAL 4002. Commercial Real Estate Finance 3 sem. hrs.

Provides the student with an in-depth knowledge of real estate finance, real estate investment, and the operation of the real estate capital markets. The objective of the course is to understand the many sources and uses of capital in the commercial real estate industry. The course begins with the mechanics of mortgage finance, followed by a detailed presentation of mortgage underwriting, lender ratios, and discounted cash flow analysis.

Prereq: FINA 3001.

REAL 4110. Commercial Real Estate Valuation 3 sem. hrs.

This course uses the "three approaches" to value process to estimate the fair market value a commercial building in the Milwaukee metropolitan area. The primary focus of this course is on an applied market analysis and the lease-by-lease modeling of tenant income for a commercial property as part of the income approach to value. The sales comparison and cost approaches to value are included in the course and are part of a narrative appraisal.

Prereq: Completion or concurrent enrollment in both REAL 3001 and REAL 4002.

REAL 4120. Cases in Commercial Real Estate 3 sem. hrs.

Focuses on the applied analysis of commercial real estate. The emphasis of the course is on the analysis of real estate for purchase, development, or financing across the major real estate investment sub-areas (apartments, office, retail, and warehouse/distribution). The objective of the course is to take conceptual real estate knowledge and apply it to Harvard Business School and Milwaukee Area cases. Knowledge from the many required finance, marketing, real estate, accounting, and other business and economics courses is used in analyzing the cases in this course. *Prereq: Completion or concurrent enrollment in both REAL 3001 and REAL 4002.*

REAL 4931. Topics in Real Estate 3 sem. hrs.

Prereq: REAL 3001.

REAL 4953. Seminar in Real Estate 3 sem. hrs.

Prereq: REAL 3001.

REAL 4986. Real Estate Internship – Grading Period 3 sem. hrs.

S/U grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

REAL 4995. Independent Study in Real Estate 1-4 sem. hrs.

Prereq: Cons. of dept. ch.

MANAGEMENT (MANA)

Chairperson and Associate Professor: Maranto

Assistant Chairperson and Associate Professor: Srivastava

Professor: T. Bausch, Cotton, Keaveny

Associate Professor: Inderrieden, Kaiser, O'Neill, Rehbein, Stewart, Syam

Associate Professor Emeritus: McElroy

Assistant Professor: Adya, Chintakananda, Cotteleer,

Fisher, J. Kim, Griffin, Lee, Ow

Adjunct Instructor: Ennis, Rau, Schwiesow

Adjunct Assistant Professor: Collins

Entrepreneur-in-Residence: Keane

MANA 2028. 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: MATH 1390 or equiv. and MATH 1400 or equiv.; computer literacy.*

MANA 3001. 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 3002. 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 3034. 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 3035. 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 4010. 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 3001.*

MANA 4040. 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 4101. Strategic Management
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 3001 (or ECON 3003) and FINA 3001 and MANA*

3001 and OSCM 3001 and MARK 3001; MANA 3002 is NOT a prerequisite.

MANA 4931. Topics in Organizational Management 3 sem. hrs.

Prereq: Jr. stndg.

MANA 4953. Seminar in Management
3 sem. hrs.

Prereq: Jr. stndg.

MANA 4995. Independent Study in Management 1-4 sem. hrs.

Prereq: Cons. of dept. ch.

Entrepreneurship (ENTP)

ENTP 1001. The Entrepreneurial Experience
3 sem. hrs.

An overview of entrepreneurship from the vantage point of the entrepreneurial practitioner with a strong expertise and/or interest in fields such as, but not limited to, sciences, communication and theatre arts, engineering and health sciences. Explores a variety of issues including identifying opportunities, assessing risk, innovation and problem solving, funding the startup and process identification and planning. *Prereq: Soph stndg.; not available for students enrolled in the College of Business Administration. Cannot be counted toward the entrepreneurship major.*

ENTP 3001. Understanding Entrepreneurship
3 sem. hrs.

This course is designed to have students understand entrepreneurship in a meaningful way consistent with Marquette's mission and concern for the whole person. Students develop a short, preliminary business plan and reflection on their values and lifetime aspirations. Class time focuses on small group and class discussion as well as interaction with experienced entrepreneurs. Students prepare individualized projects based on the entrepreneurship interest, e.g., family business, corporate entrepreneurship. *Prereq: Jr. stndg.*

ENTP 3986. Internship Work Period 0 sem. hrs. SNC/UNC grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

ENTP 4010. 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: Sr. stndg.*

ENTP 4020. Consulting to Entrepreneurs
3 sem. hrs.

Students conduct a consulting project for an entrepreneur and provide its findings and recommendations, orally and in writing, to the client. Students develop skills in project management, advisory and consulting services, and primary research. Students also learn applied business knowledge to the project. *Prereq: Sr. stndg. in business or cons. of instr.*

ENTP 4080. Entrepreneurial Finance
3 sem. hrs.

Focuses on the financial aspects of entrepreneurship, from the first decision as to whether or not to undertake an activity, to projecting financial needs, reviewing the trade-offs between alternative financing choices, to harvesting. Topics will include but are not limited to: bootstrapping, the role of angel investors, private placements, venture capital, banking options, commercial financing, public offers (IPOs, PIPES), factoring, franchising, and joint ventures. *Prereq: FINA 3001.*

ENTP 4931. Topics in Entrepreneurship
3 sem. hrs.

Prereq: ENTP 3001

ENTP 4953. Seminar in Entrepreneurship
3 sem. hrs.

Prereq: ENTP 3001.

ENTP 4986. Entrepreneurship Internship – Grading Period 3 sem. hrs.

S/U grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

ENTP 4995. Independent Study in Entrepreneurship 1-4 sem. hrs.

Prereq: Cons. of dept. ch.

Human Resources (HURE)

HURE 3001. 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.*

HURE 3986. Internship Work Period 0 sem. hrs. SNC/UNC grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

HURE 4003. Employment Law 3 sem. hrs.

Provides an overview of the major federal laws which regulate human resources management, as well as common law. Topics include: wrongful discharge, privacy, defamation, negligent hiring, Title VII, affirmative action, the Americans with Disabilities Act, ERISA, Workers' Compensation, and the Occupational Safety and Health Act. Provides human resource managers and line supervisors with a sufficient working knowledge of these laws to reduce the risk of imposing legal liability on their employers by their own actions and to minimize liability for questionable or unlawful acts of company agents through prompt and effective action. *Prereq: Cons. of M.B.A. prog. dir.*

HURE 4005. Employee Benefit Systems
3 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: HURE 3001.*

HURE 4010. 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 2028 and HURE 3001.

HURE 4020. 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.

HURE 4030. 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 2028 and HURE 3001.

HURE 4050. Human Resources Information Systems 3 sem. hrs.

Addresses the use of human resource information systems to facilitate and improve managerial decisions pertaining to human resource issues. Topics include: information systems fundamentals and modeling of human resource issues to assist decision making in such areas as HR and affirmative action planning, staffing, training and development, compensation and benefit administration.

Prereq: Cons. of M.B.A. prog. dir.

HURE 4080. Training and Development 3 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: HURE 3001. May be taken for graduate credit by students enrolled in Master of Science in Human Resources with appropriate additional assignments.

HURE 4931. Topics in Human Resources 3 sem. hrs.

Prereq: HURE 3001

HURE 4953. Seminar in Human Resources 3 sem. hrs.

Prereq: HURE 3001.

HURE 4986. Human Resources Internship — Grading Period 3 sem. hrs.

S/U grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

HURE 4995. Independent Study in Human Resources 1-4 sem. hrs.

Prereq: Consent of department chair.

Information Technology (INTE)**INTE 2051. Business Applications 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: Jr. stndg.*

INTE 3001. 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: Jr. stndg.*

INTE 3053. Project Management 3 sem. hrs.

The course addresses organizational, team, and technical aspects of successful project management. Through class projects, students will learn to align project objectives with organizational strategies, plan, execute, and control a project, allocate material and people resources to project components, design and develop project documentation, estimate and control project and organizational risks, and manage cross functional and virtual teams as well as inter-organizational relationships.

Prereq: Jr. stndg.

INTE 3986. Internship Work Period 0 sem. hrs. SNC/UNC grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.***INTE 4052. 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: Jr. stndg.

INTE 4054. Emerging Technologies 3 sem. hrs.

Advances in technological and market forces have changed the way applications are used have dramatically increased the demand for mobility and bandwidth. Business professionals must understand these emerging technologies to creatively leverage them for business solutions and integrate them with existing systems. This course will familiarize students with an array of leading edge technologies; help them understand their business feasibilities in financial, marketing, operations and other business functions; and examine social, economic, and ethical impact of these technologies. Topics include changes in voice and data communication infrastructures, emerging trends in database environments, storage trends, integration, and information privacy and security among others.

Prereq: INTE 3001.

INTE 4055. Web-based Applications 3 sem. hrs.

This course focuses on designing and developing Web-based applications using a variety of programming languages and tools. Students are exposed to Internet application development architecture. Class projects include developing business-to-consumer (B2C) and business-to-business (B2B) applications, among others. On completion of the course, student will understand the challenges, technologies, and issues in developing and deploying Web-based applications.

Prereq: INTE 2051 or COSC 1010 or cons. of instr.

INTE 4158. Systems Analysis and Design 3 sem. hrs.

The course provides future information technology (IT) professionals with systems theory, research, and applications for private and public organizations concerning requirements analysis and design techniques, problem finding, and problem solution. Students will develop process modeling and teamwork skills to develop a feasibility study and working prototype as deliverables to a real client based on the client's needs. The prototype will include a database, client interfaces, systems procedures, controls, and documentation. Methodologies include traditional, structured, and object-oriented analysis and design approaches. *Prereq: INTE 3001.*

INTE 4931. Topics in Information Technology 3 sem. hrs.

Prereq: Jr. stndg.

INTE 4953. Seminar in Information Technology 3 sem. hrs.

Prereq: Jr. stndg.

INTE 4986. Information Technology Internship — Grading Period 3 sem. hrs. S/U grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.***INTE 4995. Independent Study in Information Technology** 1-4 sem. hrs.

Prereq: Consent of department chair.

Operations and Supply Chain Management (OSCM)**OSCM 3001. 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 2028.*

OSCM 3986. Internship Work Period 0 sem. hrs.

SNC/UNC grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

OSCM 4010. 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: OSCM 3001.*

OSCM 4015. 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: OSCM 3001.*

OSCM 4020. 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: OSCM 3001.*

OSCM 4030. Supply Chain Strategy and Practice 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: OSCM 3001.*

OSCM 4060. Decision Modeling in Operations and Supply Chain Management 3 sem. hrs.

Introduction to spreadsheet-based decision modeling in operations and supply chain management, primarily using Microsoft Excel. Students are exposed to relevant decision models widely applied in industry. The focus is on relevance and application rather than theory. Topics include network and transportation models, linear programs, decision trees, and simulation. *Prereq: MANA 2028 and OSCM 3001.*

OSCM 4931. Topics in Operations and Supply Chain Management 3 sem. hrs. *Prereq: OSCM 3001.*

OSCM 4953. Seminar in Operations and Supply Chain Management 3 sem. hrs. *Prereq: OSCM 3001.*

OSCM 4986. Operations and Supply Chain Management Internship – Grading Period 3 sem. hrs.

S/U grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

OSCM 4995. Independent Study in Operational Supply Chain Management 1-4 sem. hrs.

Prereq: Consent of department Chair.

MARKETING (MARK)

Chairperson and Professor: Akhter
Professor: Andrews, Durvasula, Lacznia, Lysonski
Professor Emeritus: Brownlee
Associate Professor: Bauer, Garrett, Robinson
Assistant Professor: Miller, Simmons
Instructor: Terrian
Adjunct Instructor: Jennings

MARK 3001. Introduction to Marketing 3 sem. hrs.

Examines the marketing process in the operations of firms in profit and nonprofit sectors. Environmental forces including consumer characteristics, government regulation and social aspects are explored. Emphasis is given to how firms develop marketing strategies in terms of target market selection, segmentation and marketing mix variables such as product development, promotional methods, price determination and channels of distribution. Ethical aspects of marketing are also given consideration. *Prereq: Jr. stndg. and ECON 2003.*

MARK 3986. Internship Work Period 0 sem. hrs.

SNC/UNC grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

MARK 4006. Business-to-Business Marketing 3 sem. hrs.

Application of marketing strategy in serving the needs of business-to-business (industrial), organizational, and governmental customers. Topics include: the characteristics of business markets, organizational buyer behavior, purchasing processes, customer relationship management and e-commerce strategies for business markets, business market segmentation, managing products for business markets, supply chain management, logistics, pricing strategies for business markets, business market communications and personal selling in business markets. *Prereq: MARK 3001.*

MARK 4010. Consumer Behavior 3 sem. hrs.

To learn about the factors that influence consumers' purchasing decisions of services and products. Behavioral science concepts will be examined including perception, motivation, learning, self-concept, personality, attitudes and attitude change, culture, social class, reference groups and the family unit. Application of behavioral concepts (from psychology, sociology, anthropology and economics) to marketing management and marketing research problems, including diffusion of innovations (new products), brand loyalty, consumer satisfaction and consumer decision-making models. *Prereq: MARK 3001.*

MARK 4020. Integrated Marketing Communications 3 sem. hrs.

Study of the promotional mix (advertising, sponsorship marketing, point-of-purchase communication, sales promotion, publicity, and personal selling) and other elements of the marketing mix (product/brand, price, distribution) as they speak with one voice in communication between the firm and its customers. Also, application of behavioral sciences, branding, packaging and interactive marketing to marketing communications. Social, legal, ethical and international aspects of marketing communications. *Prereq: MARK 3001.*

MARK 4040. International Marketing 3 sem. hrs.

Takes theoretical, strategic, and ethical approaches to evaluate and understand organizational behaviors; economic, political, cultural and technological developments at local, regional and global levels; country market selection, market entry strategies (exporting, licensing and foreign direct investments) and marketing mix strategies (product, price, supply chain, and integrated marketing communication). Issues related to global market segmentation, targeting and positioning are also examined. *Prereq: MARK 3001.*

MARK 4050. e-Marketing Strategy 3 sem. hrs.

Covers internet marketing and e-commerce beyond the basic notions found in the introductory marketing course. Coverage includes a variety of topics including internet marketing strategy, Web site traffic, multi-channel strategy, aspects of customer loyalty in an e-commerce framework, and the future of internet marketing and e-commerce. *Prereq: MARK 3001.*

MARK 4051. Direct Marketing 3 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 2028 and MARK 3001.*

MARK 4060. Marketing Research 3 sem. hrs.

To provide a scientific solution to marketing problems this course focuses on qualitative techniques (e.g., focus groups) and quantitative techniques (e.g. survey) for data collection, storing of data in data sets and databases, data analysis using statistical techniques, and interpretation of results. Topics covered include: research analysis, research design, sampling analysis, data collection methods, data storage methods, univariate and bivariate statistical analysis, report writing and the integration of research and marketing management. *Prereq: MARK 3001 and MANA 2028. Marketing minors may substitute PSYC 2001 or MATH 1700 for MANA 2028.*

MARK 4070. Marketing and Society 3 sem. hrs.

Focuses on environments external to the firm which have significant consequences on marketing practice. Evaluates how the marketing system contributes to or impedes the objectives of society. Topics discussed: Consumerism, Law, Marketing Ethics, Ecology, Marketing and Corporate Social Responsibility. *Prereq: MARK 3001.*

MARK 4080. Product and Pricing Strategy 3 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 3001.*

MARK 4085. 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.

Prereq: MARK 3001.

MARK 4094. 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 3001.*

MARK 4095. 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.

Prereq: MARK 3001.

MARK 4110. Marketing Management

3 sem. hrs.

The application of marketing variables are emphasized in terms of planning, implementation, and control of marketing activities for a firm. A major component is understanding how to develop marketing objectives, policies, programs and strategy for the firm. Experience is given in crafting marketing programs and developing marketing decisions through target market selection and formulation of marketing mix parameters of product, price, place and promotion. The case method is commonly used in the course. *Prereq: Sr. stndg., MARK 3001, MARK 4060, and one other MARK course.*

MARK 4931. Topics in Marketing 3 sem. hrs.

Prereq: MARK 3001.

MARK 4953. Seminar in Marketing 3 sem. hrs.

Prereq: MARK 3001.

MARK 4986. Marketing Internship – Grading Period 3 sem. hrs.

S/U grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

MARK 4995. Independent Study in Marketing 1-4 sem. hrs.

Prereq: Cons. of dept. ch.

SPECIAL PROGRAMS:

BUSINESS ADMINISTRATION (BUAD)

BUAD 1002. Computer Literacy in Business 0 sem. hrs.

Introduction to university computer system and resources. Online information, e-mail, Internet and World Wide Web. Word processing and spreadsheet analysis, with hands-on lab exercises and assignments. *Prereq: Enrolled in Business Administration; or BUAD minor and cons. of dept. ch.; cons. of assistant dean. SNC/UNC grade assessment.*

BUAD 1005. The Dynamics of Cross Cultural Engagement 1 1.5 sem. hrs.

This seminar provides an academic component for the cross-cultural residence hall experience, Inclusive Leadership CommUNITY. The residence hall brings together majority and minority first year students selected because of their interest in being engaged in cross-cultural experiences in and out of the classroom. The seminar requires attendance at designated extramural cultural events such as movies, plays, lectures or community outings, including a weekend retreat on diversity issues. Students will read and discuss articles and books, keep journals, and reflect on cross-cultural experiences. Written assignments will provide opportunities to demonstrate achievement of course goals. Offered fall term. S/U grade assessment.

Prereq: Enrollment in the residence hall Inclusive Leadership CommUNITY program.

BUAD 1006. The Dynamics of Cross Cultural Engagement 2 1.5 sem. hrs.

This seminar provides an academic component for the cross-cultural residence hall experience, Inclusive Leadership CommUNITY. The residence hall brings together majority and minority first year students selected because of their interest in being engaged in cross-cultural experiences in and out of the classroom. The seminar requires attendance at designated extramural cultural events such as movies, plays, lectures, or community outings, including a weekend retreat on diversity issues. Students will read and discuss articles and books, keep journals, and reflect on cross-cultural experiences. Written assignments will provide opportunities to demonstrate achievement of course goals. Offered spring term. S/U grade assessment.

Prereq: Enrollment in the residence hall Inclusive Leadership CommUNITY program.

BUAD 2005. Business Foundations 2 sem. hrs.

Introduces students to basic business concepts and practises with the goal of developing an understanding of the relationship between communication and the various business functions of corporations. Emphasizes the relationship between key corporate functions such as finance, marketing, sales, production, management, and information technology. Available only to students not enrolled in Business Administration.

Prereq: Corporate Communications major.

BUAD 3089. 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. S/U grade assessment. *Prereq: Enrolled in Business Administration and Jr. stndg; and cons. of instr.*

BUAD 3986. Business Administration Internship – Work Period 0 sem. hrs.

SNC/UNC grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

BUAD 4931. Topics in Business Administration 3 sem. hrs.

Prereq: Jr. stndg.

BUAD 4953. Seminar in Business Administration 3 sem. hrs.

Prereq: Jr. stndg.

BUAD 4995. Independent Study in Business Administration 1-4 sem. hrs.

Prereq: Consent of Assistant Dean.

INTERNATIONAL BUSINESS (INBU)

Program Director: Hosseini

INBU 831. Full-Time Non-Marquette Study Abroad 0 sem. hrs.

This is a zero-credit, full-time status course designed to keep students' files active while studying at an approved Non-Marquette sponsored study abroad program. In order to participate, the student must have a consortium agreement with an institution that has been accredited in the United States, or by the Ministry of Education in the country in question and whose accreditation has been verified by Marquette's Office of International Education. Course credits that have been pre-approved by the College of Business Administration before travel takes place, will be transferable to student's business curriculum. SNC/UNC grade assessment.

Prereq: Cons. of the International Business Studies Director.

INBU 2953. Seminar for International Exchange Students 0 sem. hrs.

This course is required for all exchange students that are studying at Marquette University for the current semester. Students will be oriented to the college, the educational system and the business practices in the United States.

Prereq: Approval of International Business Dir. SNC/UNC grade assessment.

INBU 3986. Internship Work Period 0 sem. hrs.

SNC/UNC grade assessment. *Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.*

INBU 4141. International Business Strategy

3 sem. hrs.

In this course global business operations and global business decision making and strategy are integrated in a theoretically sound and practically useful manner. The focus of this discussion-based course is to explore various aspects of business entry and sustenance into the global marketplace using the "case method". In assessing their market position and strategic options, many companies face the decisions of a) going global, b) expanding globally, and/or c) competing globally. The course's cases, reading material, exercises, and projects are oriented towards addressing the critical issues surrounding the above options. *Prereq: ECON 4044 or 4046, ECON 3001 or ECON 3003, MANA 3001, OSCM 3001, MARK 3001, FINA 3001.*

INBU 4931. Topics in International Business

3 sem. hrs.

*Prereq: Jr. stndg.***INBU 4951. Travel and Study Abroad in International Business** 3 sem. hrs.*Prereq: Cons. of dept. ch.; cons. of International Business Director.***INBU 4953. Seminar in International Business** 3 sem. hrs.*Prereq: Jr. stndg.***INBU 4986. International Business Internship — Grading Period** 3 sem. hrs.*S/U grade assessment. Prereq: Jr. stndg., cons. of prog. dir. and cons. of internship dir.***INBU 4995. Independent Study in International Business** 1-4 sem. hrs.*Prereq: Consent of Director of International Business Program.***LEADERSHIP (LEAD)***Program Directors: Schwiesow, Terrian**Lecturers: Schwiesow, Terrian*

Performance in all LEAD courses is assessed using S and U grades.

LEAD 1000. 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. *S/U grade assessment. Prereq: Enrolled in Business Administration; first semester freshman.*

LEAD 2000. Applying Business Leadership Skills 1 sem. hr.

This course focuses on students developing their business skills to enter and exceed in the business community. Emphasis is placed on communication (both verbal and written, as well as presentation skills); practical application of ethics; formal and non-formal dining etiquette; interviewing (for an internship or job); and interacting with business executives in a real life situation with representatives from a student's chosen major(s). *S/U grade assessment.*

*Prereq: Enrolled in Business Administration and Soph. stndg. and LEAD 1000 or BUAD 1002.***LEAD 3000. Strategies for the Future and Dealing in the Business Community**

1 sem. hr.

This course deals with the future decisions many students will make in their business careers. Students will be presented graduate opportunities available to them (MS, MBA, Law, etc.); legal considerations for all business people; interacting effectively in the business environment; transitioning between jobs; dressing for success; and additional ethical training. *S/U grade assessment.*

Prereq: Enrolled in Business Administration and Sr. stndg. and LEAD 2000.

J. William and Mary Diederich College of Communication

Students in the J. William and Mary Diederich College of Communication develop knowledge and skills that lead to professional careers in communication and performing arts. The University Core of Common Studies in conjunction with courses taken in the arts and sciences, provide Diederich 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 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 one or more of the following majors: advertising, broadcast and electronic communication, communication studies, corporate communication, journalism, public relations, and theatre arts. Students enrolled in the Honors Program who successfully complete that program may receive an honors bachelor of arts.

The Diederich College of Communication offers programs leading to the master of arts degree. Students may choose to focus their program in advertising and public relations; broadcast and electronic communication; communication studies; journalism; mass 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

Majors offered by the Diederich College of Communication are: advertising, broadcast and electronic communication, communication studies, corporate communication, journalism, public relations, and theatre arts. The available minors are: advertising, art history, broadcast and electronic communication, communication studies, film, music, public relations, studio art and theatre arts. Students majoring or minoring in the mass communication areas (advertising, broadcast and electronic communication, journalism and public relations), cannot take more than 48 credits in the mass communication areas and are required to take 80 credits outside of the mass communication areas with at least 65 credits in the liberal arts. No more than 15 credits used to fulfill one major may be used to complete another major and no more than 9 credits

used to fulfill one minor may be used to complete another minor. Students who major in one mass communication area (advertising, broadcast and electronic communication, journalism or public relations) may not major or minor in a second mass communication area. Students who major in corporate communication may not major or minor in communication studies or public relations.

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 Diederich 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 their previous college work to be considered for admission. An applicant's entire academic performance will be evaluated in making an admission decision.

GRADUATION REQUIREMENTS

AMOUNT AND QUALITY OF WORK

Candidates for a degree must earn a minimum of 128 credit hours. Candidates must also earn a minimum number of quality points equal to twice the number of credit hours attempted at Marquette (2.000 grade point average). Normally, lower division courses are numbered 1000 to 2999; upper division courses are numbered 3000 to 4999. Thirty-two hours of credit in upper-division courses must be earned by candidates for a degree. Students majoring in advertising, broadcast and electronic communication, journalism and public relations may not exceed 48 credits in any combinations of those courses and are required to take 80 credits outside of mass communication with at least 65 of the 80 credits in the liberal arts. A student taking more than 48 credits in those areas will have to add a similar number of credits beyond the 128 needed to graduate.

Students may be required to submit a portfolio or take part in some other non-credit activity to satisfy Diederich College of Communication or departmental assessment requirements.

Applications for graduation are to be submitted to the College Records office by the last day of advising week in the term prior to the term of graduation (November for May and August graduates; March for December graduates).

It is the responsibility of students to know and fulfill all university and college requirements.

GENERAL DEGREE REQUIREMENTS

Candidates for the baccalaureate degree must complete a minimum of 128 credit hours including the following requirements:

| <i>Area</i> | <i>Credit Hours</i> |
|---|---------------------|
| University Core of Common Studies | 36 |
| Diederich College of Communication Curriculum | 21-23 |
| Communication | 15 |
| Foreign Language/Diverse Culture | 6-8 |
| Major | 33-41 |
| Minor (or Second Major) | 18-24 |

UNIVERSITY CORE OF COMMON STUDIES (UCCS) 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)

(Note: Please consult the Core of Common Studies Web site at www.marquette.edu/core for an updated list of approved core courses.)

DIEDERICH COLLEGE OF COMMUNICATION CURRICULUM 21-23 CREDITS

The Diederich College of Communication builds on the foundational educational experience provided by Marquette's Core of Common Studies. It does this through a college curriculum that amplifies and deepens the knowledge, skills, and values imparted to students in the nine knowledge areas of the Common Core, and by offering students the opportunity to develop specialized knowledge and skills in a variety of undergraduate majors and minors. The Diederich College of Communication thereby extends the student's core of common studies experiences, and focuses further learning in pursuit of a specialized degree. Communication students are required to take the following courses:

- 3 cr CMST 1000 Introduction to Communication
- 3 cr COMM 1100 Contemporary Presentation
- 3 cr COMM 1200 Media in Society
- 3 cr COMM 2100 Introduction to Visual Communication
- 3 cr COMM 2500 Introduction to Communication Research Methods
- 6-8 cr Foreign Language or Diverse Cultures

COMMUNICATION REQUIREMENT

All students must complete CMST 1000 – Introduction to Communication, COMM 1100 – Contemporary Presentation, COMM 1200 – Media in Society, COMM 2100 – Introduction to Visual Communication and COMM 2500 – Introduction to Communication Research Methods. COMM 2100 cannot also be used to fulfill the University Core of Common Studies Literature and Performing Arts requirement.

FOREIGN LANGUAGE/DIVERSE CULTURE REQUIREMENT

Students must complete either two semesters of foreign language or two UCCS approved Diverse Cultures courses. These courses cannot also be used to fulfill any UCCS requirements. Students who have never studied a foreign language or who wish to pursue a new language must take levels 1 and 2 to complete this requirement. Students who wish to continue studying the same language begun in high school must complete the Foreign Language Placement Exam. On the basis of this exam, students will be placed in the appropriate language course. For further details on the placement exam in French, German and Spanish see the University section on "Placement in Foreign Languages" or visit the Department of Foreign Languages and Literatures Web site at www.marquette.edu/fofa.

MINOR REQUIREMENT

Communication students must complete a minor or a second major. More information regarding minors is contained in the curricula information section of this bulletin.

MAJOR

See 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.

ACADEMIC REGULATIONS

Students in the Diederich College of Communication are expected to comply with the academic requirements and regulations listed in the University section of this bulletin and must fulfill the graduation requirements stated in the *bulletin issued the year they entered Marquette*. Students who have not enrolled for one or more years must normally follow the requirements in effect at the time of their return. (Exception is made for students who interrupted enrollment to serve in the Armed Forces).

ACADEMIC DISHONESTY

The college adheres to the university policy on academic dishonesty found in the University section of this bulletin. Ethical behavior is essential to any communication professional and it is expected of students in the Diederich College of Communication. Cheating, plagiarism, unapproved collaboration, or falsifying work in whole or in part are infractions that can result in 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. After the WA grade has been issued, the student may not apply for a grade of W. 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 up to four 75-minute periods or six 50-minute periods in a three-credit course or four 50-minute periods in a two-credit course or eight 50-minute periods in a four-credit course.

TRANSFER CREDIT POLICY

Students planning to take course work at other institutions should obtain college approval before enrolling. Approval will be based on a review of course descriptions in the current bulletin of the college or university at which the courses will be taken. The student should present a bulletin or 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.

In accordance with the University Transfer Credit Policy, the Diederich College of Communication will grant credit for courses taken for a grade and completed at a C or better. Only credits will transfer, not grades. Courses completed in a quarter-hour system will be converted to semester credits, therefore reducing the total credits accepted by one-third. A Marquette equivalent will be specified for each transferable course. Some transferable courses, for which there is no discernible Marquette equivalent, will be awarded credit using "generic" numbers such as 9290-9299 and 9390-9399. These credits will count toward the degree and may fulfill college core, major or minor requirements. However, they will not fulfill any requirement where a specific course number (i.e. PHIL 1001 or THEO 1001) has been indicated. Contact the director of student records with any questions or concerns regarding transfer credits.

CD AND D GRADES

CD grades in courses offered by the Diederich College of Communication will be accepted toward majors and minors offered by the Diederich College of Communication provided that the student has a 2.000 grade point average in the major or minor. Grades of D do not normally fulfill the credit hour requirement for a major or minor in the Diederich College of Communication. Students who receive a D in a Diederich College of Communication major or minor course should contact the department chair who will make a recommendation as to 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.

REQUIREMENT TO WITHDRAW FOR ACADEMIC REASONS

Students admitted to the Diederich College of Communication are expected to meet college academic standards. Academic performance is monitored carefully by the college, and students who fail to maintain steady progress or demonstrate adequate achievement will be required to withdraw from the college.

The bases for review are grade point deficiency, inadequate progress, grades of WA or UW, and the violation of special conditions. Special conditions may be prescribed in writing at the time of the student's admission, readmission, or transfer into the college. Conditions may also be prescribed in writing in the case of a student whose course performance or failure to follow academic advice warrants such action. *Registration is interpreted as the student's agreement to the specified conditions.* All students to whom conditions have been specified will be subject to review and academic dismissal should they fail to fulfill the terms specified.

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

PROFESSIONAL STANDARDS

All papers produced by students in all classes under the jurisdiction of the Diederich College of Communication are expected to conform to professional standards of lucidity, coherence, grammar, spelling, and punctuation. All 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.

STUDENT MEDIA

BROADCAST OPERATIONS

MUTV is a student-run, cable television station which serves the campus community. The station is a co-curricular activity in the Diederich College of Communication. Student volunteers from all fields of study find experience in production, sales, promotion, management, news, sports, entertainment, and virtually every aspect of television. MUTV uses excellent facilities including two digital color studios and a computerized newsroom.

Marquette Radio, a student-run radio station, is webcast worldwide and broadcast on Time-Warner into residence halls, the Alumni Memorial Union and other campus buildings. Marquette Radio is a co-curricular activity in the Diederich College of Communication but it is staffed and managed by students representing many academic fields.

Students who participate in Marquette Radio gain experience in news production, announcing, public relations, advertising sales, management, record company relations and virtually every aspect of radio. The station broadcasts seven days a week during the academic year from its studios in Johnston Hall. The studios include a main broadcast studio, a news/production studio, and a computerized newsroom.

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 university student newspaper. Its purpose is to publish the news of the university, to aid in the formation of opinion and to afford the students an opportunity for extended practice in newspaper editorial responsibility.

The *Marquette Journal* is the student magazine that aims to: (1) serve as a publication for the expression of the undergraduates intellectual concerns, both artistic and scientific; (2) foster effective expression and encourage initiative and responsibility among undergraduate students; and (3) afford students the opportunity for practice in magazine editing, writing, and production.

FACILITIES/LABORATORIES

STUDENT LOUNGE

The student lounge, located in the lower level of Johnston Hall, provides students a quiet, comfortable and easily accessible area to work, meet or just relax between classes.

STUDENT ORGANIZATIONS OFFICE

The student organizations office, located in the lower level of Johnston Hall, provides work space, computers and storage for the leaders of the college's student organizations.

LABORATORIES

Several laboratories are available to students in the Diederich College of Communication. These facilities include:

ADVANCED DIGITAL LABORATORY

The J. William and Mary K. Diederich Advanced Digital Laboratory is a computing laboratory emphasizing design and visual communication. Each of the eighteen Macintosh lab stations has its own scanner and a full complement of software for visual production.

CONVERGED BROADCAST NEWS LABORATORY

The Kay and Don McNeill Broadcast News Laboratory provides students with real-world resources to hone their broadcast writing, reporting and producing skills. The Associated Press News Wire and EZ News are used extensively for class-related and co-curricular activities including live news broadcasts by Marquette University Television and Marquette Radio.

GRAPHICS LABORATORIES

Students use Apple Macintosh workstations in two labs equipped with professional production software for publication editing, design and desktop publishing courses.

MULTIMEDIA AND BROADCAST LABORATORIES

In-studio work employs two fully-equipped, digital color studios, video editing suites, audio studios, extensive computer graphics platforms (including facilities for animation), digital video effects, advanced interactive digital equipment, both audio and video field equipment, a radio station (Marquette Radio) and a TV station (MUTV) on campus. Mobile equipment is used to broadcast sporting events.

REPORTING LABORATORIES

Two reporting laboratories are equipped with personal computers, standard newsroom reference materials and Internet access.

THEATRE AND DANCE LABORATORIES

The Evan P. and Marion Helfaer Theatre provides an excellent theatre/teaching facility on campus. The structure includes a 226-seat theatre, with additional audience seating for the disabled; a proscenium stage; a scenery shop on stage level; multipurpose room for acting,

directing and dance instruction; and production rooms: costume, light lab, make-up and dressing rooms. The 89-seat Straz Theatre provides additional classroom and performance space.

WAKERLY TECHNOLOGY TRAINING CENTER

The Wakerly Technology Training Center provides a laboratory of up-to-date digital hardware, software and workspace appropriate for training as well as the development of multimedia projects. Individual students and teams typically work on class and community service projects. Web design, graphic layout, video, and advertising campaign development are typical areas of project focus

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 the CCR is:

- To enhance the development of collaborative and interdisciplinary communication research programs at Marquette University;

- To advance the development of theoretically-based communication research and its integration with the important teaching and service activities of the university;

- To maintain an environment that encourages, respects and rewards faculty and student communication research efforts;

- To enhance the potential to identify and develop present and future research opportunities that blend theoretical, social and professional applications;

- To provide broad, centralized support for the centers and faculty associated with the CCR.

CENTER FOR MASS MEDIA RESEARCH

As part of the graduate program, the college operates the Center for Mass Media Research. Limited opportunities exist for juniors and seniors to participate in the work of the center as research clerks. Assistantships are reserved for students in the graduate 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 Diederich College of Communication Student Council integrates social and academic student activities across the college. The council provides opportunities in a wide variety of leadership positions.

DEBATE TEAM

Debate is open to all interested undergraduate students and accommodates students with little or no academic debate experience as well as those with sufficient ability and experience to step immediately into national caliber competition. Debate is designed as an outlet for students who are interested in developing research and argumentation skills in a competitive environment. The debate team competes in tournaments on college and university campuses across the country.

LAMBDA PI ETA

Lambda Pi Eta is an honorary society that also serves as a service organization to the college and local community. It is sponsored by the National Communication Association and honors outstanding full-time undergraduate students in communication studies. For eligibility, students are required to achieve a 3.250 GPA in their communication studies major or minor, a 3.000 overall GPA and have completed 12 credit hours in the major or minor. Benefits include the possibility of attending/participating in a regional communication conference and/or in the annual National Communication Association conference, as well as the privilege of being a member of the society.

KAPPA TAU ALPHA

A Marquette chapter of Kappa Tau Alpha, the national honor society for journalism and mass communication, was established at Marquette in 1929. Undergraduate students majoring in advertising, broadcast and electronic communication, journalism and public relations who are in the upper ten percent scholastically in their junior or senior year are eligible for membership. Graduate students in the upper ten percent scholastically in their group who have completed 12 hours in journalism or mass communication are also eligible for membership. Selections are made annually.

MARQUETTE UNIVERSITY PLAYERS

The Marquette University Players invites participation by students from across the campus, regardless of major. Student members participate in studio productions each academic year.

PUBLIC RELATIONS STUDENT SOCIETY OF AMERICA

The Marquette University Public Relations Student Society of America 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 Diederich College of Communication offers majors in advertising, broadcast and electronic communication, communication studies, corporate communication, journalism, public relations, and theatre arts. Students majoring in advertising, broadcast and electronic communication, journalism, and public relations cannot take more than 48 credits in these areas and are required to take 80 credits outside of the mass communication areas with at least 65 credits in the liberal arts. No more than 15 credits used to fulfill one major can be used to complete another. Students who major in one mass communication area (advertising, broadcast and electronic communication, journalism or public relations) cannot select another major or minor in a second mass communication area. Students majoring in corporate communication cannot select a double major or minor in either communication studies or public relations. Specific major requirements and typical four-year programs are listed at the end of this section.

Students for whom particular interests may be better served by a flexible grouping of courses from several areas can pursue an interdisciplinary major. Such students should consult a faculty adviser in their area. With this adviser, the student will write a proposal explaining the relationship between educational objectives and the choice of an interdisciplinary major, a listing of courses to be included, and the sequence in which they will be taken. The proposal, as well as any subsequent modifications, is subject to the approval of the Diederich College of Communication undergraduate curriculum committee and the associate dean.

Students with interdisciplinary interest in electronic communication may pursue a flexible program of study through an interdisciplinary major in electronic communication studies. Such students should consult the chairperson 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. Students who enter the Diederich College of Communication as first semester freshman may change majors during the freshman and sophomore year regardless of grade point average. However, after the second semester of the sophomore year, students wishing to declare a major in Advertising or Public Relations will need a 3.000 grade point average. Students who transfer into the Diederich College of Communication may change majors, however, they will need a 3.000 grade point average to declare a major in Advertising or Public Relations at any time. Students outside the Diederich College of Communication may declare a major in Advertising or Public Relations only with a 3.000 or higher grade point average. Advisers are assigned to students based on the major. Students can declare their major in the college Records Office.

MINORS

Students in the Diederich College of Communication are required to complete a minor or second major. Minors are offered by most disciplines in the Klingler College of Arts and Sciences and the requirements are listed in the 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.

Students can also complete an *interdisciplinary minor* composed of a minimum of 18 hours of course work complementary to the major. Courses which comprise the interdisciplinary minor are selected by the student, approved by the adviser and subject to the approval of the Diederich College of Communication undergraduate curriculum committee and the associate dean.

The following minors are available to any Marquette University student. Students majoring in advertising, broadcast and electronic communication, journalism or public relations cannot minor in any of these mass communication majors. Students majoring in corporate communication cannot minor in communication studies or public relations. No more than 9 credits used to fulfill one minor can be used to complete another minor.

Advertising Minor: 18 credits including ADPR 1400, 2200 and four courses from ADPR 2400, 3200, 3400, 4100, 4200, 4300, 4400, 4500, 4600, 4700, 4953 and ADVE 4997.

Art History Minor: See Fine Arts (FIAR) section below.

Broadcast and Electronic Communication Minor: 20 credits including BREC 1964, 2205, COMM 1200, 4400 and courses selected in consultation with a BREC adviser.

Communication Studies Minor: 18 credits including CMST 1000, 2100 and (2310 or 3300) plus CMST electives.

Film Minor: 18 credits from any FILM courses and any other related courses offered (i.e. MUSI 2420, ENGL 4780 or FREN 3600).

Music Minor: 19 credits including MUSI 2410, 2500 and 3500; two courses chosen from the following: MUSI 1610, 2420, 2440, 2460, 2610, 2910, 3610 and HIST 3165. Students must also participate in at least four semesters of one-credit, approved ensembles including MUSI 1100, 1200 or 1300.

Public Relations Minor: 18 credits including ADPR 1800, 2200 and four courses from ADPR 2400, 3200, 3600, 4200, 4300, 4500, 4600, 4700, 4953 and PURE 4997.

Studio Art Minor: See Fine Arts (FIAR) section below.

Theatre Arts Minor: 18 credits as follows: 2 credits of PEAR 2964; THAR 1100, 1300, 1310, 1320, 1330, 2600 and 4200.

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, give 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 by contacting either the Diederich College of Communication or Klingler College of Arts and Sciences.

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 curricula. Students must be enrolled at Marquette with full-time status in order to register for FIAR courses. As a full-time student you are eligible to register for a maximum of six credits of Fine Arts courses in each semester. However, you must be able to meet any prerequisites before registering for a course. Prerequisites may change after the printing of the bulletin. Please consult the schedule of classes at the time of registration.

The tuition cost of enrolling in FIAR courses is included in your Marquette full-time student tuition rate. 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 MIAD, 273 East Erie Street.)

MINOR IN STUDIO ART:

PROGRAM ONE

(Recommended for Advertising Majors)

* HIST 1201 History of Western Art 1

* HIST 1202 History of Western Art 2

FIAR 1100 Visual Dynamics 1: Concept, Process and Composition

FIAR 2900 Communication Design 1

FIAR 2910 Communication Design 2

* ADPR 3200 Marketing Communications Design and Production

PROGRAM TWO

(Recommended for Theatre Arts Majors)

* HIST 1201 History of Western Art 1

* HIST 1202 History of Western Art 2

FIAR 1000 Observational Drawing **and** FIAR 1100 Visual Dynamics 1: Concept, Process & Composition

FIAR 1300 Space, Form and Materials

And TWO courses listed here:

FIAR 2220 Painting 1: Direct Methods

FIAR 2230 Painting 2: Indirect Methods

FIAR 2520 Figure Sculpture 1

FIAR 2530 Figure Sculpture 2

PROGRAM THREE

(Recommended for any major)

- * HIST 1201 History of Western Art 1
- * HIST 1202 History of Western Art 2
- FIAR 1000 Observational Drawing **and** FIAR 1100 Visual Dynamics 1: Concept, Process & Composition
- And TWO courses (in sequence) from a single MIAD fine arts discipline listed below:
 - Drawing (FIAR 2000, 2010)
 - Painting (FIAR 2220, 2230)
 - Figure Sculpture (FIAR 2520, 2530)
 - Photography (FIAR 2800, 2810)
 - Printmaking (FIAR 2300, 2310; 2600, 2610; 2700, 2710)

PROGRAM FOUR

(Recommended for any major)

- * HIST 1201 History of Western Art 1
- * HIST 1202 History of Western Art 2
- FIAR 1000 Observational Drawing **or** FIAR 1100 Visual Dynamics 1: Concept, Process & Composition
- FIAR 1300 Space, Form and Materials
- FIAR 2500 Sculpture: Carving and Casting
- FIAR 2510 Sculpture: Construction: Metal and Wood

MINOR IN ART HISTORY:

- * HIST 1201 History of Western Art 1
 - * HIST 1202 History of Western Art 2
 - * PHIL 3370 Philosophy of Art and Beauty
- Plus three art history course offerings at MIAD

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 33 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) and are required to take 80 credits outside of mass communication areas with at least 65 credits in the liberal arts. The following courses must be completed toward the 33 credits:

| <i>Course</i> | <i>Credit</i> |
|---|---------------|
| ADPR 1400 Advertising Principles | 3 |
| ADPR 1800 Public Relations Principles | 3 |
| ADPR 2200 Media Writing | 3 |
| ADPR 2400 Strategic Research for Advertising and Public Relations | 3 |
| ADPR 3400 Advertising Copywriting | 3 |
| ADPR 4100 Advertising Media | 3 |
| ADVE 4997 Advertising Campaigns | 3 |
| COMM 3800 Media Law | 3 |
| COMM 3900 Ethical Problems of Mass Communication. | 3 |
| ADPR/BREC/CMST/JOUR Electives. | 6 |

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The following courses are also required but do not count as hours in the major: CMST 3200 or 3300, ECON 2003, MARK 3001, PSYC 1001, and one of the following courses, MATH 1700, PSYC 2001 or MANA 2028.

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) and are required to take 80 credits outside of mass communication areas with at least 65 credits in the liberal arts.

| | <i>Required Courses</i> | <i>Credits</i> |
|-------------------|--|----------------|
| BREC 1964 | Practicum in Student Broadcasting | 1 |
| BREC 2205 | Production Techniques | 3 |
| BREC 2335 or 2445 | Script and Continuity or Broadcast Newswriting and Editing | 3 |
| BREC 4997 | Senior Capstone | 2 |
| COMM 1200 | Media in Society | 3 |
| COMM 3800 | Media Law | 3 |
| COMM 3900 | Ethical Problems of Mass Communication | 3 |
| COMM 4400 | Mass Communication Theory and Research | 3 |
| BREC | BREC electives | *15 |
| <i>Total</i> | | 36 |

* 5-7 of these credits can be from ADPR/JOUR/COMM with departmental consent

BREC majors must complete PSYC 1001 and one of the following: MATH 1700, PSYC 2001, SOCI 2060. BREC majors may complete a maximum of three credits in BREC 3986 and a maximum of six credits in BREC 4995. They are allowed no more than six credits in or a combination of BREC 4961 and BREC 4953.

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 2250, 2445, 4440, 4450 and 4460. These choices emphasize writing and reporting while providing sufficient background in critical areas. In contrast, students wishing to emphasize production might select BREC 2250, 2335, 2555, 2610, 2710, 4275, 4615, 4620, 4850, 4910 and 4920. Other combinations and/or emphases are possible. Some courses under the headings of ADPR, COMM and JOUR may be counted as BREC electives with the approval of the student's adviser and the chair of BREC.

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: Our ability to communicate defines what it means to be human and is a central feature of our existence. People communicate in a variety of contexts: interpersonal, group, organizational, public and intercultural. This major examines the theories, concepts, and skills related to human interaction and gives students the opportunity to develop personal communication skills. The focus of the major is the development of the ability to understand and critique communication practices.

The communication studies major explores organizational and managerial communication, family communication, gender and interpersonal communication, multicultural and international communication, and argumentation and persuasion. Students have the flexibility to choose a specific area of focus or to combine several in ways that best meet their interests and career plans. Communication studies majors will be prepared for careers in a variety of fields including corporations, politics, family and social service agencies, multinational organizations, law, nonprofit organizations, and education.

Requirements for the Major: A total of 33 credits of course work must be completed for the major in communication studies.

| <i>Course</i> | <i>Credit</i> |
|---|---------------|
| CMST 1000 Introduction to Communication | 3 |
| CMST 2100 Interpersonal Communication | 3 |
| CMST 2310 Argumentation | 3 |
| CMST 2600 Foundations of Communication Studies | 3 |
| CMST 3200 Organizational Communication | 3 |
| CMST 3300 Persuasion | 3 |
| CMST 4997 Communication and Contemporary Issues | 3 |
| CMST CMST electives | 12 |

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WISCONSIN TEACHING LICENSURE IN SPEECH COMMUNICATION (MIDDLE CHILDHOOD/EARLY ADOLESCENCE)

In addition to completing all requirements as specified by the College of Education, students must also complete all requirements listed under the communication studies major.

WISCONSIN TEACHING LICENSURE IN SPEECH COMMUNICATION (EARLY ADOLESCENCE/ADOLESCENCE)

In addition to completing all requirements as specified by the College of Education as well as those listed under the communication studies major, students seeking Wisconsin teaching licensure in speech communication at the early adolescence/adolescence level must also complete COMM 1200 (Media in Society), CMST 4810 (Directing Speech Activities) and CMST 4400 (Cross Cultural Communication in the United States). The latter two will count toward required electives in the communication studies major.

The typical program for communication studies majors appears at the end of this section.

CORPORATE COMMUNICATION MAJOR REQUIREMENTS

General Information: Work in the corporate environment will require students to accurately assess internal and external corporate communication needs and frame strategic responses that are appropriate to multiple contexts and audiences. Students will also need to understand the role of the corporation within our contemporary global society as well as the way in which communication helps shape, maintain and ultimately transform various aspects of corporate identity, culture and vision.

The corporate communication major is designed to address these needs by providing a broad-based curriculum that draws from both theory and practice. After successfully completing this major, students will be able to think critically about the role of the corporation, understand the intersection of corporate and communication practice and develop skills that can be applied across various corporate contexts.

Requirements for the Major: A total of 36 credits of course work are required for completion of the major in corporate communication.

| <i>Course</i> | <i>Credit</i> |
|--|---------------|
| CCOM 2000 Issues in Corporate Communication | 3 |
| CCOM 3250 Corporate Writing | 3 |
| CCOM 3750 Corporate Rhetoric | 3 |
| CCOM 4750 Corporate Social Responsibility. | 3 |
| CCOM 4986 Corporate Communication Internship | 1 |
| ADPR 1800 Public Relations Principles | 3 |
| ADPR 2400 Strategic Research in Advertising and Public Relations | 3 |
| BUAD 2005 Business Foundations | 2 |
| CMST 3200 Organizational Communication | 3 |
| CMST 4600 Communication Audits and Consulting | 3 |

Students must also select at least one course from three of the four following categories:

| | |
|--|---|
| Advanced Communication and Production Skills | 3 |
| ADPR 3200 Marketing Communications Design and Production | |
| ADPR 3600 Public Relations Writing | |
| BREC 4910 Technology and Learning | |
| CMST 3210 Business and Professional Presentations | |
| Corporate Ethics and Law | 3 |
| BULA 3001 Legal Environment of Business | |
| COMM 3800 Media Law | |
| PHIL 4330 Business Ethics | |
| Globalization and Diversity | 3 |
| ADPR 4600 Multicultural and International Advertising and Public Relations | |
| CMST 4270 Communicating in Multinational Organizations | |
| COMM 4500 Race and Gender Issues in Mass Communication | |
| Relational Communication | 3 |
| CMST 2000 Introduction to Small Group Communication | |
| CMST 2100 Interpersonal Communication | |
| CMST 3300 Persuasion | |

The following courses are also required but do not count as hours in the major: CMST 1000, COMM 1100, COMM 2100, ECON 1001 (or ECON 2003 and ECON 2004) and MATH 1700, PSYC 2001, SOCI 2060 or MANA 2028.

The typical program for corporate communication majors 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. Majors, grounded in the liberal arts, learn about those areas of law, history, ethics and social science that relate to the information media and its functions in society and acquire the professional expertise necessary to pursue careers in journalism itself as well as related fields such as law, business and government. Writing is emphasized.

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) and are required to take 80 credits outside of the mass communication areas with at least 65 credits in the liberal arts. The following courses must be completed toward the 40 credits:

| <i>Course</i> | <i>Credit</i> |
|---|---------------|
| JOUR 1100 News Media Writing | 3 |
| JOUR 1550 Introduction to Digital Story Telling Technology | 3 |
| JOUR 1964 Practicum in Student Publications | 1 |
| JOUR 2100 Reporting | 3 |
| JOUR 4200 Publications Editing | 3 |
| JOUR 4600 History of American News Media | 3 |
| COMM 3800 Media Law | 3 |
| COMM 3900 Ethical Problems of Mass Communication | 3 |
| One theory/research course: | 3 |
| COMM 4100 Mass Media and the American Family | |
| COMM 4200 International Communication | |
| COMM 4300 Introduction to Survey Research in the Communications Media | |
| COMM 4400 Mass Communication Theory and Research | |
| COMM 4500 Race and Gender Issues in Mass Media | |
| One writing course: | 3 |
| JOUR 4110 Persuasive Writing | |
| JOUR 4120 Feature Writing | |
| JOUR 4130 Critical Writing | |
| JOUR 4140 Depth Reporting | |
| JOUR 4150 Investigative Reporting | |
| JOUR 4160 Narrative Nonfiction Reporting | |
| JOUR 4310 Communication of Urban Issues | |
| JOUR 4320 Religious Journalism | |
| JOUR 4330 Health, Science and Environmental Communication | |
| JOUR 4340 Business and Economic Journalism | |
| One design/editing course: | 3 |
| JOUR 4500 Newspaper Design | |
| JOUR 4510 Magazine Design | |
| Journalism Electives* | 6 |

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*Maximum of three credits in JOUR 3986; with consent of adviser, student may choose appropriate ADPR/BREC/COMM/FILM courses.

The following courses also are required but do not count as hours in the major: ECON 1001, POSC 2201, plus one of the following: MATH 1700 or PSYC 2001 or SOCI 2060. One course in U.S. history. Two courses chosen from: PSYC 1001, SOCI 1001 or ANTH 1001, plus one advanced course in the same subject.

WISCONSIN TEACHING LICENSURE IN JOURNALISM (MIDDLE CHILDHOOD/EARLY ADOLESCENCE)

In addition to completing all requirements as specified by the College of Education, students must also complete all requirements listed under the journalism major.

WISCONSIN TEACHING LICENSURE IN JOURNALISM (EARLY ADOLESCENCE/ADOLESCENCE)

In addition to completing all requirements as specified by the College of Education, students seeking Wisconsin teaching licensure in journalism at the early adolescence/adolescence level must also complete 34 hours including JOUR 1964, 1100, 2100, 4120, or 4140; 4200, 4500 or 4510; 4600, 4800; COMM 1200, 3800, 3900 and one course from 4100, 4200, 4400 or 4500.

The typical program for journalism majors 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 33 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) and are required to take 80 credits outside of the mass communication areas with at least 65 credits in the liberal arts. The following courses must be completed toward the 33 credits

| <i>Course</i> | <i>Credit</i> |
|---|---------------|
| ADPR 1400 Advertising Principles | 3 |
| ADPR 1800 Public Relations Principles | 3 |
| ADPR 2200 Media Writing | 3 |
| ADPR 2400 Strategic Research for Advertising and Public Relations | 3 |
| ADPR 3200 Marketing Communications Design and Production | 3 |
| ADPR 3600 Public Relations Writing | 3 |
| ADPR 3986 Internship in ADPR | 3 |
| COMM 3800 Media Law | 3 |
| COMM 3900 Ethical Problems of Mass Communication | 3 |
| PURE 4997 Public Relations Campaigns | 3 |
| ADPR/BREC/CMST/JOUR electives | 3 |
| | 33 |

The following courses are also required but do not count as hours in the major: ECON 2003, MARK 3001, PSYC 1001 and either MATH 1700, PSYC 2001, or MANA 2028. Public relations majors must also choose one course from the following: CMST 3200 or CMST 3300.

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 Diederich 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 Klingler College of Arts and Sciences where they often elect a minor such as English, foreign language, psychology or political science.

Theatre arts majors have also found it beneficial to double major in any of the areas listed above, thereby obtaining a broad range of connections between the performing arts and other disciplines.

In addition to the major and minor in theatre arts, the Department of Performing Arts offers an interdisciplinary minor in dance. These interdisciplinary minors are declared in the sophomore or junior years. Your adviser will assist you in selecting classes for these interdisciplinary minors.

Requirements for a Major: A total of 41 credits of course work must be completed for the major in theatre arts:

| <i>Course</i> | <i>Credit</i> |
|--|---------------|
| PEAR 2964 Performing Arts Practicum | 3 |
| THAR 1100 Acting I – Fundamental Technique | 3 |
| THAR 1300 Stagecraft | 3 |
| THAR 1310 Stagecraft Practicum | 0.5 |
| THAR 1320 Basic Costume Technology | 3 |
| THAR 1330 Basic Costume Technology Practicum | 0.5 |
| THAR 2140 Voice and Movement for Stage | 3 |
| THAR 2400 Aspects of Theatrical Design | 3 |
| THAR 2600 Play Analysis | 3 |
| THAR 3953 Career and Preparation Studies Seminar | 1 |
| THAR 4200 History of Theatre | 3 |
| THAR 4210 Contemporary Theatre | 3 |
| THAR 4240 Period Styles | 3 |
| | 32 |
| Theatre Arts electives (to reach 41 credits) | 9 |
| | 41 |

In addition to the required sequence, the following courses are strongly recommended for those students who wish to concentrate in a specific discipline within the performing arts.
Performance: PEAR 2964*, THAR 1100*, 1120, 1300*, 1320*, 1340, 2100, 2140*, 2160, 2500, 2600*, 3100, 3953*, 4100, 4200*, DANC 2320, 2340, 2500, 3100. THAR 2140* and 2160 are required for performance track.

Directing: PEAR 2964*, THAR 1100*, 1120, 1300*, 1320*, 2140* or 2320, 2400*, 2500, 2600*, 3953*, 4200*, 4360, 4500.

Design/Technical: PEAR 2964*, THAR 1100*, 1300*, 1320*, 2320, 2400*, 2500, 2600*, 3953*, 4200*, 4360, 4380, 4400, 4420, 4440.

*required courses

Participation in Theatre Productions: All theatre arts majors and minors are required to audition for theatre productions and participate in a technical, design, or management capacity. All university students are invited to audition for theatre productions or participate in a technical, design, or management capacity. Students must have a minimum 2.000 GPA to participate in any production.

WISCONSIN TEACHING LICENSURE IN THEATRE ARTS (MIDDLE CHILDHOOD/EARLY ADOLESCENCE)

In addition to completing all requirements as specified by the College of Education, students must also complete all requirements listed under the theatre arts major.

WISCONSIN TEACHING LICENSURE IN THEATRE ARTS (EARLY ADOLESCENCE/ADOLESCENCE)

In addition to completing all requirements as specified by the College of Education as well as those listed under the theatre arts major, students seeking Wisconsin teaching licensure in speech communication at the early adolescence/adolescence level must also complete THAR 2500 (Play Direction) and THAR 4360 (Theatre Management) both of which will count toward required electives in the theatre arts major.

The typical program for theatre arts majors appears at the end of this section.

TYPICAL PROGRAM FOR ADVERTISING MAJORS

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|-------------------------------|-----------|
| CMST 1000 | 3 | COMM 1200 | 3 |
| UCCS (R-ENGL 1001) | 3 | UCCS (R-COMM 1100) | 3 |
| UCCS (HCS) | 3 | ADPR 1400 | 3 |
| Foreign language or UCCS (DC) | 3-4 | Foreign language or UCCS (DC) | 3-4 |
| UCCS (T-THEO 1001) | 3 | UCCS (HNE-PHIL 1001) | 3 |
| | 15-16 | | 15-16 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------------------|-----------|-----------------------------|-----------|
| UCCS (ISB-PSYC 1001) or elective | 3 | ECON 2003 | 3 |
| UCCS (DC) or COMM 2100* | 3 | UCCS (DC) or COMM 2100* | 3 |
| UCCS (MR-MATH 1700) or (SN) | 3-4 | UCCS (MR-MATH 1700) or (SN) | 3-4 |
| ADPR 2200 | 3 | COMM 2500 | 3 |
| UCCS (LPA) | 3 | ADPR 1800 | 3 |
| | 15-16 | | 15-16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------|-----------|-----------------------|-----------|
| CMST 3200 or 3300 | 3 | COMM 3900 | 3 |
| MARK 3001 | 3 | ADPR 3986 or elective | 3 |
| UCCS (HNE-PHIL 2310) | 3 | Minor/electives | 12 |
| ADPR 2400 | 3 | | |
| ADPR 3400 | 3 | | |
| ADPR elective | 3 | | |
| | 18 | | 18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|-----------------------|-----------|
| UCCS (T) | 3 | ADVE 4997 | 3 |
| ADPR 4100 | 3 | Major/minor electives | 15 |
| COMM 3800 | 3 | | |
| Minor/electives | 6 | | |
| ADPR elective | 3 | | |
| | 18 | | 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

* COMM 2100 Introduction to Visual Communication cannot be used to fulfill the UCCS Literature/Performing Arts requirement.

**TYPICAL PROGRAM FOR
BROADCAST AND ELECTRONIC COMMUNICATION MAJORS**

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------------|-----------|---------------------------------------|-----------|
| CMST 1000 | 3 | COMM 1200 | 3 |
| UCCS (R-ENGL 1001) | 3 | UCCS (ISB-PSYC 1001) or (T-THEO 1001) | 3 |
| UCCS (HCS) | 3 | Elective | 3 |
| Foreign language or UCCS (DC) | 3-4 | Foreign language or UCCS (DC) | 3-4 |
| BREC 1964 | 1 | BREC 2205 or 2335/2445 | 3 |
| UCCS (ISB-PSYC 1001) or (T-THEO 1001) | 3 | | |
| | 16-17 | | 15-16 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-----------|-----------------------------|-----------|
| UCCS (R-COMM 1100) | 3 | Elective | 3 |
| UCCS (DC) or COMM 2100* | 3 | UCCS (DC) or COMM 2100* | 3 |
| COMM 2500 | 3 | UCCS (MR-MATH 1700) or (SN) | 3-4 |
| UCCS (HNE-PHIL 1001) | 3 | UCCS (LPA) | 3 |
| BREC 2205 or 2335/2445 | 3 | Major/minor elective | 3 |
| | 15 | | 15-16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------------|-----------|----------------------|-----------|
| UCCS (ISB-PSYC 1001) or (T-THEO 1001) | 3 | UCCS (HNE-PHIL 2310) | 3 |
| COMM 4400 | 3 | COMM 3800 or 3900 | 3 |
| UCCS (MR-MATH 1700) or (SN) | 3-4 | BREC elective | 3 |
| BREC electives | 6 | Minor/electives | 9 |
| | 15-16 | | 18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------|-----------------------------|-----------|
| UCCS (T) | 3 | BREC 4997 or minor/elective | 2-3 |
| COMM 3800 or 3900 | 3 | BREC elective | 6 |
| BREC 4997 or minor/elective | 2-3 | Major or minor electives | 9 |
| Major or minor electives | 9 | | |
| | 17-18 | | 17-18 |

- 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

* COMM 2100 Introduction to Visual Communication cannot be used to fulfill the UCCS Literature/Performing Arts requirement.

TYPICAL PROGRAM FOR COMMUNICATION STUDIES MAJORS

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|-------------------------------|-----------|
| CMST 1000 | 3 | COMM 1200 | 3 |
| UCCS (R-ENGL 1001) | 3 | CMST 2100 or 2600 | 3 |
| UCCS (HCS) | 3 | Foreign language or UCCS (DC) | 3-4 |
| Foreign language or UCCS (DC) | 3-4 | UCCS (MR) or (SN) | 3-4 |
| UCCS (ISB) or (T-THEO 1001) | 3 | UCCS (ISB) or (T-THEO 1001) | 3 |
| | 15-16 | | 15-17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-----------|-------------------------|-----------|
| UCCS (R-COMM 1100) | 3 | Major electives | 6 |
| UCCS (DC) or COMM 2100* | 3 | UCCS (DC) or COMM 2100* | 3 |
| UCCS (MR) or (SN) | 3-4 | UCCS (LPA) | 3 |
| CMST 2100 or 2600 | 3 | COMM 2500 | 3 |
| CMST 2310 | 3 | | |
| | 15-16 | | 15 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|-----------------------|-----------|
| UCCS (HNE-PHIL 1001) | 3 | UCCS (HNE-PHIL 2310) | 3 |
| CMST 3200 | 3 | CMST 3300 | 3 |
| Major/minor electives | 9-12 | Major/minor electives | 9-12 |
| | 15-18 | | 15-18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|-----------------------|-----------|
| UCCS (T) | 3 | Major/minor electives | 12-15 |
| Major/minor electives | 9-15 | CMST 4997 | 3 |
| | 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

* COMM 2100 Introduction to Visual Communication cannot be used to fulfill the UCCS Literature/Performing Arts requirement.

TYPICAL PROGRAM FOR CORPORATE COMMUNICATION MAJORS

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|--|-----------|
| CMST 1000 | 3 | UCCS (R-COMM 1100) or COMM 2100* | 3 |
| UCCS (R-ENGL 1001) | 3 | COMM 1200 | 3 |
| UCCS (HCS) | 3 | UCCS (ISB-ECON 1001) | 3 |
| Foreign language or UCCS (DC) | 3-4 | Foreign language or UCCS (DC) | 3-4 |
| UCCS (T-THEO 1001) | 3 | UCCS (SN) | 3-4 |
| | 15-16 | | 15-17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|----------------------------------|-----------|
| CCOM 2000 | 3 | BUAD 2005 | 3 |
| UCCS (R-COMM 1100) or COMM 2100* | 3 | UCCS (LPA) | 3 |
| UCCS (DC) | 3 | UCCS (HNE-PHIL 1001) | 3 |
| COMM 2500 | 3 | ADPR 1800 or CMST 3200 | 3 |
| ADPR 1800 or CMST 3200 | 3 | UCCS (MR-MATH 1700) | 3 |
| | 15 | | 15 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------------|-----------|--------------------------|-----------|
| UCCS (HNE-PHIL 2310) | 3 | UCCS (T) | 3 |
| CCOM 3250 | 3 | CCOM 3750 | 3 |
| CMST 4600 | 3 | CCOM elective | 3 |
| Minor/elective | 6-9 | ADPR 2400 | 3 |
| | | Minor/elective | 6 |
| | 15-18 | | 18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|---------------------------------|-----------|
| CCOM elective | 3 | CCOM 4750 | 3 |
| CCOM 4986 | 1 | CCOM elective | 3 |
| Minor/elective | 3 | Minor/elective | 6 |
| Major/minor/electives | 9 | Major/minor/electives | 6 |
| | 16 | | 18 |

- University Core of Common Studies (UCCS)
- Diverse Cultures (DC)
- Histories of Cultures and Society (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

*COMM 2100 Introduction to Visual Communication cannot be used to fulfill the UCCS Literature/Performing Arts requirement.

TYPICAL PROGRAM FOR JOURNALISM MAJORS

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-------------|-------------------------------|-------------|
| CMST 1000 | 3 | COMM 1200 | 3 |
| UCCS (R-ENGL 1001) | 3 | PSYC 1001 or SOCI 1001 | 3 |
| UCCS (HCS-HIST 1101) | 3 | UCCS (HNE-PHIL 1001) | 3 |
| Foreign language or UCCS (DC) | 3-4 | Foreign language or UCCS (DC) | 3-4 |
| UCCS (T-THEO 1001) | 3 | JOUR 1100 | 3 |
| JOUR 1964 | 1 | | |
| | <hr/> 16-17 | | <hr/> 15-16 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-------------|-----------------------------------|-------------|
| UCCS (R-COMM 1100) | 3 | JOUR 2100 | 3 |
| UCCS (DC-ANTH 1001) | | UCCS (DC-ANTH 1001) | |
| or COMM 2100* | 3 | or COMM 2100* | 3 |
| UCCS (MR-MATH 1700) or (SN) | 3-4 | UCCS (MR-MATH 1700) or (SN) | 3-4 |
| JOUR 1550 | 3 | UCCS (LPA) | 3 |
| COMM 2500 | 3 | UCCS (ISB-ECON 1001 or POSC 2201) | 3 |
| | <hr/> 15-16 | | <hr/> 15-16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------------------------------|-------------|--------------------------------------|-------------|
| UCCS (ISB-ECON 1001 or POSC 2201) | 3 | UCCS (HNE-PHIL 2310) | 3 |
| JOUR 4600 | 3 | Upper division ANTH or PSYC or SOCI | 3 |
| JOUR 4200 or JOUR (writing elective) | 3 | JOUR 4200 or JOUR (writing elective) | 3 |
| JOUR elective or theory/research | 3 | JOUR design or theory/research | 3 |
| Minor/elective | 3-6 | Minor/elective | 0-3 |
| | <hr/> 15-18 | | <hr/> 15-18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|-------------|-------------------|-------------|
| UCCS (T) | 3 | COMM 3800 or 3900 | 3 |
| COMM 3800 or 3900 | 3 | Minor/electives | 9-15 |
| JOUR design or elective | 3 | | |
| JOUR elective | 3 | | |
| Minor/electives | 3-6 | | |
| | <hr/> 15-18 | | <hr/> 12-15 |

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

* COMM 2100 Introduction to Visual Communication cannot be used to fulfill the UCCS Literature/Performing Arts requirement.

TYPICAL PROGRAM FOR PUBLIC RELATIONS MAJORS

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|-------------------------------|-----------|
| CMST 1000 | 3 | COMM 1200 | 3 |
| UCCS (R-ENGL 1001) | 3 | UCCS (R-COMM 1100) | 3 |
| UCCS (HCS) | 3 | ADPR 1800 | 3 |
| Foreign language or UCCS (DC) | 3-4 | Foreign language or UCCS (DC) | 3-4 |
| UCCS (T-THEO 1001) | 3 | UCCS (HNE-PHIL 1001) | 3 |
| | 15-16 | | 15-16 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------------------|-----------|-----------------------------|-----------|
| UCCS (ISB-PSYC 1001) or elective | 3 | ECON 2003 | 3 |
| UCCS (DC) or COMM 2100* | 3 | UCCS (DC) or COMM 2100* | 3 |
| UCCS (MR-MATH 1700) or (SN) | 3-4 | UCCS (MR-MATH 1700) or (SN) | 3-4 |
| ADPR 2200 | 3 | UCCS (LPA) | 3 |
| ADPR 1400 | 3 | COMM 2500 | 3 |
| | 15-16 | | 15-16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|------------------------|-----------|
| CMST 3200 or CMST 3300 | 3 | Major/minor electives | 3-6 |
| MARK 3001 | 3 | UCCS (HNE-PHIL 2310) | 3 |
| ADPR 2400 or 3200 | 3 | ADPR 2400 or ADPR 3200 | 3 |
| ADPR 3600 | 3 | ADPR 3986 | 3 |
| Minor/electives | 3-6 | Elective | 3 |
| | 15-18 | | 15-18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|-----------------|-----------|
| UCCS (T) | 3 | ADPR elective | 3 |
| PURE 4997 | 3 | COMM 3800 | 3 |
| COMM 3900 | 3 | Minor/electives | 6-9 |
| Minor/electives | 6-9 | | |
| | 15-18 | | 12-15 |

- 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

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TYPICAL PROGRAM FOR THEATRE ARTS MAJORS

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------------|-------------------------------|-----------------|
| CMST 1000 | 3 | COMM 1200 | 3 |
| UCCS (R-ENGL 1001) | 3 | Foreign Language or UCCS (DC) | 3-4 |
| Foreign language or UCCS (DC) | 3-4 | THAR 1120 | 3 |
| THAR 1100 | 3 | THAR 1300/1310 or 1320/1330 | 3.5 |
| THAR 1300/1310 or 1320/1330 | 3.5 | Elective | 3 |
| | <hr/> 15.5-16.5 | | <hr/> 15.5-16.5 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------|------------|-------------------------|-----------------|
| UCCS (R-COMM 1100) | 3 | Major elective | 3 |
| UCCS (DC) or COMM 2100* | 3 | UCCS (DC) or COMM 2100* | 3 |
| UCCS (HCS) | 3 | UCCS (MR) or (SN) | 3-4 |
| PEAR 2964 | 0.5 | UCCS (LPA) | 3 |
| THAR 2140 | 3 | COMM 2500 | 3 |
| THAR 2400 | 3 | PEAR 2964 | 0.5 |
| | <hr/> 15.5 | | <hr/> 15.5-16.5 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------|-----------------|-----------------------------|-----------------|
| UCCS (HNE-PHIL 1001) | 3 | UCCS (HNE-PHIL 2310) | 3 |
| UCCS (ISB) or (T-THEO 1001) | 3 | UCCS (ISB) or (T-THEO 1001) | 3 |
| THAR 4240 or elective | 3 | THAR 4240 or elective | 3 |
| PEAR 2964 | 0.5 | PEAR 2964 | 0.5 |
| THAR 2600 | 3 | THAR 4200 | 3 |
| THAR 3953 | 1 | THAR 4210 or elective | 3 |
| Minor/electives | 2-5 | Minor/electives | 3-6 |
| | <hr/> 15.5-18.5 | | <hr/> 15.5-18.5 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------|-----------------|-----------------------|-----------------|
| UCCS (T) | 3 | PEAR 2964 | 0.5 |
| PEAR 2964 | 0.5 | Minor/electives | 9-15 |
| Minor/electives | 6-9 | THAR 4210 or elective | 3 |
| UCCS (MR) or (SN) | 3-4 | THAR 4997 | 3 |
| | <hr/> 12.5-16.5 | | <hr/> 12.5-18.5 |

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

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COURSE DESCRIPTIONS

ADVERTISING AND PUBLIC RELATIONS (ADPR)

Professor: Badaracco

Associate Professor: Baxter (Emeritus), Crowley (Emeritus), Ekachai, Pokrywczynski, Wolburg

Assistant Professor: Berg, Grow

Professional in Residence: Menck

Lecturer: Altstiel, Barnes, Branigan, Cary, Casey, Cissne, Donaldson, Gaudynski, Ingles, Lewis, Matthews, McClellan, Northey, Vollrath, Williams, Wright

ADPR 1400. 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.

ADPR 1800. 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.

ADPR 2200. 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 1001 and COMM 1100 or equiv.

ADPR 2400. 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. *Prereq:* ADPR 1400; or ADPR 1800; and restricted to declared CCOM majors and declared ADPR majors and minors.

ADPR 3200. 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 1400 or ADPR 1800; and restricted to declared CCOM majors and declared ADPR majors and minors.

ADPR 3400. 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/lab format. Offered every term. *Prereq:* ADPR 1400 and ADPR 2200 or JOUR 1100; and restricted to declared ADPR majors and minors.

ADPR 3600. Public Relations Writing 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. *Prereq:* ADPR 1800 and ADPR 2200 or JOUR 1100; and restricted to declared CCOM majors and declared ADPR majors and minors.

ADPR 3986. 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 2200 and ADPR 1400 and cons. of dept. ch.; or ADPR 1400 and JOUR 1100 and cons. of dept. ch.; or ADPR 2200 and ADPR 1800 and cons. of dept. ch.; or ADPR 1800 and JOUR 1100 and cons. of dept. ch. 0 credit will be SNC/UNC grade assessment; 1-3 credits will be S/U grade assessment.

ADPR 4100. 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. *Prereq:* ADPR 1400 and ADPR 2400; or cons. of instr.; and restricted to declared ADPR majors and minors.

ADPR 4200. Business to Business Marketing Communication 3 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. *Prereq:* ADPR 1400; or ADPR 1800; or cons. of instr.; and restricted to declared ADPR majors and minors.

ADPR 4300. 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 communication 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. Course does NOT provide instruction on how to create Web pages or any of the other technical aspects of Internet use. Course focuses on discussion of strategic approaches to using the Internet for advertising and public relations applications. *Prereq:* ADPR 1400 or ADPR 1800; or cons. of instr.; and restricted to declared ADPR majors and minors.

ADPR 4400. Advanced Advertising Copywriting 3 sem. hrs.

A continuation of ADPR 3400. Emphasis on formulating strategy and producing executions for coordinated, multi-media campaigns. Each student will create a portfolio which will showcase his or her talent and ability to work as a professional copywriter. *Prereq:* ADPR 3400; or cons. of instr.; and restricted to declared ADPR majors and minors.

ADPR 4500. Advertising and Public Relations Account Management 3 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. *Prereq:* ADPR 1400 or ADPR 1800; or cons. of instr.; and restricted to declared ADPR majors and minors.

▲ADPR 4600. Multicultural and International Advertising and Public Relations 3 sem. hrs.

This course develops knowledge and enhances skills necessary for advertising and public relations professionals for communication with diverse audiences. Topics include the role of culture, unique characteristics of groups, and effective strategies when communicating with multicultural audiences within the U.S. Students also learn to navigate the cultural, regulatory, and media environment for effective communication with audiences in countries outside the U.S. *Prereq:* ADPR 1400 or ADPR 1800 or cons. of instr.

▲ADPR 4700. Cultural Identity, Media and World Religions 3 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: *Soph. stndg.*

ADPR 4953. Seminar in Advertising and Public Relations 1-3 sem. hrs.

Specific subjects of seminars to be announced in the *Schedule of Classes*. Variable topics. *Prereq:* *Restricted to declared ADPR majors and minors.*

ADPR 4961. Special Institute/Workshop/Project 1-3 sem. hrs.

Prereq: *ADVE major; or ADVE minor; or PURE major; or PURE minor; and restricted to declared ADPR majors and minors.*

ADPR 4995. Independent Study in Advertising and Public Relations 1-3 sem. hrs.

Offered every term. S/U grade assessment.
Prereq: *Cons. of dept. ch.*

ADPR 4999. 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.*

ADVE 4997. 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 3400 and ADPR 4100; or cons. of instr.; and restricted to declared ADPR majors and minors.*

PURE 4997. 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.
Prereq: *ADPR 2400 and ADPR 3600; or cons. of instr.; and restricted to declared ADPR majors and minors.*

BROADCAST AND ELECTRONIC COMMUNICATION (BREC)

Associate Professor: Grams, Havice, Slattery
Assistant Professor: Chattopadhyay, Uglund
Adjunct Instructor: Volbrecht (Broadcast Media Adviser)

Instructor: Held

Lecturer: Fantle, Nault, Pray, Rosene, Teich

BREC 1964. Practicum in Student Broadcasting 1 sem. hr.

Students receive hands-on experience at the student-run radio and television stations, MUR and MUTV. Guided by their interests, students will be able to experience one or more departments including news, production, promotion, programming, etc. Students are also introduced to career options within the electronic media industries and are expected to perform critical analyses of new media formats, including the Web. Offered fall and spring terms. S/U grade assessment.

BREC 2205. Production Techniques 3 sem. hrs.

Basic audio and video production techniques as utilized in radio, television, cable, education, and corporate communications. Lecture/lab format.

BREC 2250. 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 2205 and BREC 2335; or BREC 2205 and BREC 2445.*

BREC 2335. Script and Continuity 3 sem. hrs.

Students learn to write in the proper script style for a variety of broadcast, video, Web and film formats. Practice in aural writing techniques with an emphasis on form and content. Offered every term.
Prereq: *ENGL 1001 and COMM 1100 or equiv.*

BREC 2445. 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 1001 and COMM 1100 or equiv.*

BREC 2555. 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 fall term.

BREC 2610. 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.

BREC 2710. 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. *Prereq:* *BREC 2250; or cons. of instr.*

BREC 3510. 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.

BREC 3900. 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 fall term.

BREC 3986. 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. S/U grade assessment.
Prereq: *Cons. of dept. ch.*

BREC 4240. 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 spring term.

BREC 4275. 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 fall term.
Prereq: *BREC 2250.*

BREC 4345. 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 term in even-numbered years.

BREC 4440. 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 spring term.
Prereq: *BREC 2205 and BREC 2445.*

BREC 4450. 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.

BREC 4460. Radio Reporting/Performance 3 sem. hrs.

Extensive practice in gathering, writing, and reporting radio news. An emphasis on vocal development and performance techniques appropriate to news, interviews, and features. Offered fall term.
Prereq: *BREC 2205 and BREC 2445.*

BREC 4615. 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 spring term.

BREC 4620. 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.

**BREC 4810. 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 spring term.

BREC 4830. 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 fall term.

BREC 4850. 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 fall term.

**BREC 4855. Communication and Social
Issues of the Internet** 3 sem. hrs.
Examines the ways in which online communication impacts the daily lives of our society and its individual members. Particular attention is given to the use of online communication to build community and social life and to the ways in which online communication is similar to or different from other forms of mediated communication. Culminates with the presentation of a major original research project. Offered spring term.

BREC 4910. Technology and Learning
3 sem. hrs.
Learning theories applied to design, use and evaluation of electronic communication technologies in instructional settings. Offered fall term. *Prereq: Jr. stndg. and BREC 2205 and BREC 2335; or Jr. stndg. and BREC 2205 and BREC 2445; or cons. of instr.*

BREC 4920. Multi-Media Authoring 3 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 spring term. *Prereq: Jr. stndg. and BREC 4910; or cons. of instr.*

**BREC 4931. Topics in Broadcast and
Electronic Communication** 1-3 sem. hrs.
Various topics in broadcast and electronic communication to be announced in the *Schedule of Classes*. Includes extensive screening and/or other activities. Lecture/lab format.

**BREC 4953. Seminar in Broadcast and
Electronic Communication** 1-3 sem. hrs.
Special subjects of seminar to be announced in the *Schedule of Classes*. Variable topics.

**BREC 4961. Special Institute/Workshop/
Project**
1-3 sem. hrs.

**BREC 4995. Independent Study in Broadcast
and Electronic Communication**
1-3 sem. hrs.
Prereq: Cons. of dept. ch.

BREC 4997. Senior Capstone 2 sem. hrs.
In order to demonstrate professional proficiency, students will create a media project designed to meet a community need. They will prepare a case study evaluating relevant scholarly research, ethical and legal implications. Discussion of career alternatives and preparation of resume and supporting materials. *Prereq: BREC major, Sr. stndg.*

BREC 4999. Senior Thesis 1-3 sem. hrs.
The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. *Prereq: Cons. of dept. ch.*

COMMUNICATION (COMM)

*Professor and Gretchen and
Cyril Colnick Chair in Communication: Soley
Lecturer: Joset, Newton, Smith, Terry*

▲COMM 1100. 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 term. 3 hrs. lec., disc. *Prereq: ENGL 1001.*

COMM 1200. 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 spring term.

**▲COMM 2100. 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 term. 3 hrs. lec., disc.

**COMM 2500. Introduction to
Communication Research Methods**
3 sem. hrs.

Introduces students to the systematic process of asking and answering questions associated with communication inquiry. Various qualitative research methodologies will be explored which will enable students to design, conduct, interpret and evaluate research more critically. *Prereq: CMST 1000, COMM 1200 and Soph. stndg. or consent of instructor.*

COMM 3800. 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 professionals. Offered every term. *Prereq: Jr. stndg.*

**COMM 3900. 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. stndg. and PHIL 2310.*

**COMM 4100. 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 spring term. *Prereq: Jr. stndg.*

COMM 4200. 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. stndg.*

**COMM 4300. Introduction to Survey
Research in the Communications Media**
3 sem. hrs.

How to conduct and understand the results of political polls and other forms of sample surveys in the communications media. Includes a discussion of ethical considerations in survey research, an introduction to principles and techniques of sampling, questionnaire construction and interviewing, practice in data analysis and related reasoning, and the presentation of results for various audiences. Offered spring term in even-numbered years. *Prereq: Jr. stndg.; MATH 1700 or SOCI 2060 or PSYC 2001 recommended but not required as prerequisites.*

**COMM 4400. 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 fall term. *Prereq: Jr. stndg; or cons. of instr.*

**COMM 4500. 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 4600. 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 spring term.

COMM 4700. 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 term in even-numbered years. *Prereq: Jr. stndg. and POSC 2201.*

COMM 4953. Seminar in Communication 1-3 sem. hrs. Special topics of seminar to be announced in the *Schedule of Classes*. Variable topics.

COMM 4961. Special Institute/Workshop/Project 0-3 sem. hrs. 0 credit will be SNC/UNC grade assessment; 1-3 credits will be graded.

COMM 4986. Internship in Communication 0-3 sem. hrs. Provides students with the opportunity to apply theories, skills, and techniques in communication. *Prereq: Cons. of dept. ch.; cons. of associate dean. 0 credit will be SNC/UNC grade assessment; 1-3 credits will be S/U grade assessment.*

COMM 4995. Independent Study in Communications 1-3 sem. hrs. *Prereq: Cons. of dept. ch.*

COMM 4999. 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.*

COMMUNICATION STUDIES (CMST)

Professor: Goldzwig, Shuter, Turner
Associate Professor: Meyer
Assistant Professor: D'Urso, Feldner
Lecturer: Carey, Dillon, Egdorf, Kempf, Laughland, Noonan, Rosene, Schultz, Voell, Wendt

CMST 1000. 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.

CMST 1300. 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.

CMST 2000. 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 2010. 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 2100. 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. *Prereq: CMST 1000.*

CMST 2300. Business Communication 2 sem. hrs. Provides students with the opportunity to explore and develop the presentation skills necessary for success within the context of business through a study of communication and theory. Includes informative, persuasive, and small group presentations, as well as an emphasis on critical thinking, listening, non-verbal and technological presentation skills. Students may not receive credit for both CMST 2300 and CMST 1300. *Prereq: Soph. Stndg. and enrolled in College of Business.*

CMST 2310. 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 2600. Foundations of Communication Studies 3 sem. hrs. Surveys major theoretical approaches to communication studies, reviews the history of the discipline and introduces students to basic research methods in the field. Offered every term.

CMST 2800. Debate/Forensic Practicum 1-2 sem. hrs. Students participate in intercollegiate debate and/or individual events and travel to various tournaments. A maximum of 2 credits can apply towards graduation.

CMST 3100. Communication and Conflict 3 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 3200. 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 every term.

CMST 3210. Business and Professional Presentations 3 sem. hrs. Explores and offers practice in the types of oral communication faced in organizational settings. The emphasis is on creation, development, and delivery of professional presentations building on persuasion and informative speaking skills. Offered annually.

CMST 3240. 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 3300. 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 1000.*

CMST 3310. 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.

CMST 3340. 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. *Prereq: CMST 1000 and CMST 3300; or cons. of instr.*

CMST 3350. 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, Chaïm Perelman, and Stephen Toulmin, among others. *Prereq: CMST 1000 and CMST 3300; or cons. of instr.*

CMST 3410. 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 3800. 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.

CMST 4110. 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 4120. 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 4130. 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. *Prereq: CMST 1000.*

CMST 4220. 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 4230. 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.

CMST 4250. 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.

Prereq: CMST 3200 or cons. of instr.

CMST 4260. New Communication**Technologies in the Workplace** 3 sem. hrs.

Presents a historical and theoretical review of the impact of new communication technologies on organizations and their membership. Course focuses on the organizational, social and communicative implications of new communication technologies across a broad range of contexts in the organizational setting, including: interpersonal, groups and teams, management, and technological innovations. Course includes some special topics particularly relevant to new communication technologies including: anonymity, privacy and surveillance, and technology apprehension. Offered annually.

Prereq: CMST 3200 or cons. of instr.

CMST 4270. 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.

CMST 4320. 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.

CMST 4330. 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.

CMST 4360. 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.

Prereq: CMST 1000 and CMST 3300; or cons. of instr.

CMST 4400. 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 4500. 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.

CMST 4600. Communication Audits and Consulting 3 sem. hrs.

Students are introduced to communication consulting and the design implementation of communication audits for corporate and non-profit settings. Surveys various models of consulting. Students learn to design and implement a communication audit that includes needs assessment, interpretation, and recommendations. Methods of audits include survey design, interviews and focus groups. Offered fall term.

Prereq: CMST 1000, and CMST 3200; or cons. of instr.

CMST 4810. Directing Speech Activities

3 sem. hrs.

Theory and practice in the organization and management of co-curricular speech activities in high school and college.

CMST 4953. Seminar in Communication Studies 1-3 sem. hrs.

Special subjects of seminar to be announced in the *Schedule of Classes*. Variable topics.

CMST 4961. Special Institute/Workshop/Project in Communication Studies

1-3 sem. hrs.

CMST 4986. Internship in Communication Studies 1-3 sem. hrs.

Internship in Communication Studies provides students with the opportunity to apply theories, skills, and techniques in communication as believed appropriate within specific organizational settings. S/U grade assessment. *Prereq: CMST 1000 and CMST 2000 and CMST 2310 and cons. of dept. ch.; plus three upper division CMST credits.*

CMST 4995. Independent Study in Communication Studies 1-3 sem. hrs.

Prereq: Cons. of dept. ch.

CMST 4997. Communication and Contemporary Issues 3 sem. hrs.

A capstone experience for Communication Studies majors. Examines communication theories and principles in the context of contemporary events and social issues. Students conduct original communication research and apply theories to specific communication contexts and practices.

Prereq: Must have completed at least 24 credit hours in the CMST major.

CMST 4999. Senior Thesis 1-3 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.

CORPORATE COMMUNICATION (CCOM)

Associate Professor: Meyer

Assistant Professor: Berg, D'Urso, Feldner

CCOM 2000. Issues in Corporate Communication 3 sem. hrs.

Offers an introduction to contemporary issues in corporate communication. Traces the history of the corporation and examines its relationship to contemporary issues in society. Explores concepts such as corporate voice, corporate identity construction, mission and branding. Considers the way in which communication is vital to both the day-to-day operations of the corporation and the corporation's ability to achieve its overall mission. Offered fall term.

CCOM 3250. Corporate Writing 3 sem. hrs.

Takes a practical and analytical approach to the development of content and style in corporate communication. Emphasis on the development of effective writing skills for clear, concise and audience-centered business documents. Additional focus on correct communication in corporate practice as related to corporate image and identity. Offered fall term. *Prereq: CCOM 2000 or cons. of instr.*

CCOM 3750. Corporate Rhetoric 3 sem. hrs.
Emphasizes the development of messages that target multiple stakeholder groups by making strategic choices of available communication media and channels. Includes a focus on audience analysis and selection of appropriate media. Students will learn to design messages that help corporations enact specific strategies to meet corporate objectives. Offered spring term. *Prereq: CCOM 2000.*

CCOM 4750. Corporate Social Responsibility 3 sem. hrs.

Analyzes the range of public debates about the social responsibilities of corporations. Key questions explored in this integrative, capstone-type course include the following: What sorts of public communication practices are commonly taken to hinder or promote corporate social responsibility? What are the ethical implications for civic life of corporations' internal communication practices? How do corporations manage their ethical relations with communities, nongovernmental organizations and other stakeholders? What sorts of groups have historically participated in public controversies over corporate social responsibility? Offered spring term. *Prereq: CCOM 2000; SR, stndg. or cons. of dept. chair.*

CCOM 4931. Topics in Corporate Communication 3 sem. hrs.

Focuses on a specific topic in Corporate Communication each term. *Prereq: CCOM 2000.*

CCOM 4986. Corporate Communication Internship 0-1 sem. hrs.

Provides students with the opportunity to apply theories, skills and techniques in a real-world corporate communication setting. 0 credit will be SNC/UNC grade assessment; 1 credit will be S/U grade assessment. *Prereq: CCOM 2000 and cons. of dept. chair.*

CCOM 4995. Independent Study in Corporate Communication 1-3 sem. hrs.

Independent study with a faculty member centered on a particular topic in corporate communication. *Prereq: CCOM 2000, CCOM 3250.*

FINE ARTS (FIAR)

FIAR 1000. Observational Drawing 1 3 sem. hrs.

A one-term course in which students meet twice weekly and will be introduced to the visual language of drawing. How the parts of the drawing relate to each other and to the composition as a whole is explored while each student strives to develop skills using traditional black-and-white media. One-half of the course places primary emphasis on depicting the human form; the other half places emphasis on depicting objects in space. *Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [F100].*

FIAR 1100. Visual Dynamics 1: Concept, Process and Composition 3 sem. hrs.

Visual Dynamics 1 is a problem solving course in which the student investigates the dynamic visual forces involved in composing on a two-dimensional plane. Students explore the interrelationships of composition, process, perception and intention. The course broadens the student's skill level in idea development, research strategies, and technique through the understanding and application of concepts, processes and the visual language. One-third of the semester is spent in a digital environment introducing the student to the computer lab and digital imaging. *Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [F110].*

FIAR 1110. Visual Dynamics 2: Color, Light and Time 3 sem. hrs.

Visual Dynamics 2 is a problem-solving course that builds on the visual exploration begun in FIAR 1100 with a concentration on issues of color and time. Color and light are explored as a visual phenomenon, as a perceptual occurrence, as pigment with specific mixing properties, and as an element with powerful expressive and symbolic potential. Time, the fourth dimension, is investigated through problems dealing with simultaneity and sequentiality. The range of tools includes traditional materials/mediums and digital imaging. One-third of the semester is spent working in a digital environment. *Prereq: FIAR 1100; Cons of dept. Fee paid to MIAD. MIAD # [F111].*

FIAR 1300. 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. *Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [F130].*

FIAR 1500. Visual Statement 1.5 sem. hrs.

In Visual Statement courses students examine the means of visual communication and artistic expression. Each course emphasizes concept, process and creativity — exploiting subject matter and media as a means of obtaining conceptual goals. Students are made aware of the interconnections which link the visual arts. *Prereq: FIAR 1300; cons. of dept. Fee paid to MIAD. MIAD # [F150-159].*

FIAR 2000. Drawing 1 3 sem. hrs.

Drawing 1 challenges the student with various complicated compositional problems. Technical proficiency and diversity are enriched through the use of familiar drawing media as well as aggressive experimentation with new media and manners of working. Additionally, the drawing experience is broadened by confronting a wide variety of drawing subjects. *Prereq: FIAR 1 and FIAR 11; cons. of dept. Fee paid to MIAD. MIAD # [FA200].*

FIAR 2010. Drawing 2 3 sem. hrs.

Drawing 2 presents open-ended involvements which require students to determine their own artistic reactions, concerns and pursuits. In addition, anatomy of the head and neck is studied as an integral component to the expressive and inventive aspects of the portrait and the self-portrait. *Prereq: FIAR 2000; cons. of dept. Fee paid to MIAD. MIAD # [FA201].*

FIAR 2120. History of Modernism: Art 3 sem. hrs.

Primarily an object-driven course, FIAR 2120 provides an in-depth study of modern and contemporary art makers and movements in the context of the critical, cultural and social issues surrounding them. Through intensive reading, writing, research, and oral assignments, students have the opportunity to study key figures, movements and theories. The course begins with a review of major trends in art since the end of the 19th century and follows with a close examination of art from the 1950s through the present day. *Prereq: HIST 1201 and HIST 1202; cons of dept. Fee paid to MIAD. MIAD # [AH212].*

FIAR 2130. History of Modernism: Design 3 sem. hrs.

Primarily an object driven course, FIAR 2130 outlines major styles and trends in communication design, illustration, industrial design, architecture and interior architecture and design from the beginning of the industrial period to the present. Through intensive reading, writing, research and oral assignments, students have the opportunity to study the philosophical, social, cultural and commercial concerns of such primary movements as Arts and Crafts, Art Nouveau, Art Deco, and Post-Modernism within Europe, the United States, and Japan. *Prereq: HIST 1201 and HIST 1202; cons. of dept. Fee paid to MIAD. MIAD # [AH213].*

FIAR 2220. Painting: Direct Methods 3 sem. hrs.

Direct painting materials, techniques, and practices are introduced in acrylic and oil media. Working from direct observation, students are introduced to the formal visual principles emphasizing composition and color as elements of a stable pictorial space. Demonstrations, slide lectures and critiques support studio assignments and instruction in traditional and contemporary formats. *Prereq: FIAR 1000 and FIAR 1100; cons. of dept. Fee paid to MIAD. MIAD # [F220].*

FIAR 2230. Painting: Indirect Methods 3 sem. hrs.

Indirect painting and glaze medium and techniques are introduced and practiced within traditional and contemporary painting philosophies. Transparent color theories, perception and formal principles provide the basis for directly observed studio assignments. Slide lectures, demonstrations and critiques assist in developing an expanded visual vocabulary. *Prereq: FIAR 1000, FIAR 1100 and cons. of dept. Fee paid to MIAD. MIAD # [F 221].*

FIAR 2300. Principles of Screenprinting

3 sem. hrs.

Covers a wide range of screenprinting techniques using water-based inks. Various methods of creating an image on the screen will be covered, including photographic, block out digitally created stencils. While learning the proper screen preparation and competent use of the equipment, the course will focus on presenting important visual and conceptual problems relevant to the screenprinting process. *Prereq: FIAR 1000 and FIAR 1100; cons. of dept. Fee paid to MIAD. MIAD # [FA230].*

FIAR 2310. Principles of Relief Print

3 sem. hrs.

Covers monochromatic and color relief-printing techniques using wood and linoleum. The students will learn the proper use of tools and equipment. The course will focus on presenting important visual and conceptual problems relevant to the relief process. Both traditional and contemporary approaches will be covered. *Prereq: FIAR 1000 and FIAR 1100; cons. of dept. Fee paid to MIAD. MIAD # [FA 231].*

FIAR 2400. Computer Studio 1 3 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; cons. of dept. Fee paid to MIAD. MIAD # [DS230].*

FIAR 2410. 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. *Prereq: Jr. stndg. and FIAR 2400; cons. of dept. Fee paid to MIAD. MIAD # [DS231].*

FIAR 2500. Sculpture: Casting and Carving

3 sem. hrs.

Sculpture: Carving and Casting investigates specific sculpture techniques, methods, philosophical concerns, and ways of seeing/working that give personal expression to material form. The shaping of permanent materials such as wood and stone by reductive approaches conceptually contrasts and complements problems in introductory casting of metals and other materials. Demonstrations, lectures, field trips, readings and critiques will develop the student's awareness of historical precedents and contemporary sculpture issues. Consideration of the interrelationships among form, material, technique and content will hone student's ability to analyze their own and others work in critiques. *Prereq: FIAR 1300; cons. of dept. Fee paid to MIAD. MIAD # [FA 250].*

FIAR 2510. Sculpture: Construction Metal and Wood 3 sem. hrs.

Sculpture: Construction, Metal and Wood focuses on material meaning discovered through thoughtful and skillful additive approaches. Structural and spatial possibilities in wood and steel are explored for their expressive potential. Intermediate woodworking — joining, bending, shaping, finishing — are introduced in conjunction with metal fabrication and construction. Welding as a direct fluid medium of unique capabilities, from literally drawing in space to architectural strength, are explored through oxy-acetylene and ARC, and MIG techniques. Students

further critique skills by examining and questioning the interplay of form, material, technique and content. *Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [FA 251].*

FIAR 2520. Figure Sculpture 1 3 sem. hrs.

To understand human form in three dimensions, students begin by mastering manual/perceptual skills of direct rendering in clay from live models. A foundation of figurative realism will be gained by learning anatomy, proportion, structure, pose and gesture with an awareness of historical precedents. Clay plasticity can facilitate a dynamic liveliness. Basic methods of hand building such as coil, slab construction, and modeling are explored, followed by firing and finishing. The course includes using armatures, mold-making and casting. Weekly investigations of materials, techniques and content will be engaged through demonstrations, slide lectures, discussions, and critiques. *Prereq: FIAR 1000 and FIAR 1300; or FIAR 1100 and FIAR 1300; cons. of dept. Fee paid to MIAD. MIAD # [FA 252].*

FIAR 2530. Figure Sculpture 2 3 sem. hrs.

Figure Sculpture 2 progresses from the skills developed in the first sculpture course toward more content-based work with concern for context. Diverse ways of interpreting the figure's planes, volumes, mass, structure, and movement initiate ideas about the figure as clear representation, abstract form, or metaphor. Assignments include a large body of work in clay, armatures, direct plaster modeling, multiples, body casting, mixed media and kinetics. Attention to surface, texture and finish is measured against questions of credibility. Serious research evidenced in work, discussions and critiques is emphasized. *Prereq: FIAR 2520; cons. of dept. Fee paid to MIAD. MIAD # [FA 253].*

FIAR 2600. Principles of Etching 3 sem. hrs.

An introductory course to the following etching techniques: hard ground, soft ground, aquatint and drypoint. Covers the preparation, etching and printing from copper and steel plates. A wide range of visual concepts will be addressed, that pertain to particular characteristics of different etching techniques. Issues of composition, space, tone, texture and value will be emphasized. Students will be encouraged to discover their personal voice while learning principles of etching. *Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [FA260].*

FIAR 2610. Non-traditional Intaglio

3 sem. hrs.

Explores a technique of collagraph, a non-etch intaglio technique where image is constructed using various textured materials and the plate is printed either as intaglio or relief. This innovative method allows creating unique surfaces, use of cut plates, working in large format and combined intaglio and relief printing. Issues of composition, space, tone, texture and value will be addressed, with a focus on large format prints. Students will be encouraged to discover their personal voice while learning the principles of collagraph. *Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [FA261].*

FIAR 2700. Principles of Stone Lithography

3 sem. hrs.

Examines the basic methods and techniques of fine art lithography. All aspects of preparing a stone for drawing, as well as the printing process and editioning will be covered. Students will work using various drawing and lithographic tools. There is a strong emphasis on drawing, exploring a wide range

of visual issues including composition, handling of materials and the investigation of spatial tonal and textural relationships. Students will be encouraged to seek and develop a personal voice, while learning rudimentary concepts of drawing and printmaking. *Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [FA270].*

FIAR 2710. Principles of Photo and Plate Lithography 3 sem. hrs.

This course is a continuation of Stone Lithography and Artist's Book. The students further their knowledge of stone, learning about color lithography, registration and editioning. The students will examine various traditional and contemporary approaches in digital imaging and computer application.

Prereq: Cons. of dept. Fee paid to MIAD. MIAD # [FA271].

FIAR 2800. Principles of Photography

3 sem. hrs.

Introduction to photography. This course covers basic principles of all forms of photography, with an emphasis on black and white photography and using the 4x5 view camera. Projects encompass camera handling, film exposure and development, darkroom procedures, print finishing, and evaluation. Students investigate depth of field, motion, burning, dodging, spotting and print presentation. The history of photography from its invention to 1950 is covered in this introductory course. One hour of history lecture is required each week. Students must have a 35mm camera with adjustable aperture and shutter speed controls and a light meter. *Prereq: FIAR 2810; cons. of dept. Fee paid to MIAD. MIAD # [FA 280].*

FIAR 2810. Elements of Digital Photography

3 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: Cons. of dept. Fee paid to MIAD. MIAD # [FA281].*

FIAR 2900. 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 presentation. *Prereq: FIAR 1100; cons. of dept. Fee paid to MIAD. MIAD # [DS200].*

FIAR 2910. 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 2900; cons. of dept. Fee paid to MIAD. MIAD # [DS201].*

FIAR 2931. Topics in Fine Art 1 1-3 sem. hrs.*Prereq: Cons. of dept.***FIAR 3931. Topics in Fine Art 2** 1-3 sem. hrs.*Prereq: Cons. of dept.*

JOURNALISM (JOUR)

Lucius W. Nieman Professor: Brennen
Professor: Griffin, Pauly

Lucius W. Nieman Professor: Leonard (*Emeritus*)
Associate Professor: Garner, Scotton, Thorn
Adjunct Instructor: Byers (Student Media Adviser)
Lecturer: Berger, Borowski, Briggs-Gammon, Feyrer, Franzen, Gillespie, Jones, Klein, Perlick, Rummler, Salsini, Thome, Vallocheril, Weber

JOUR 1100. 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 1001 or equiv.

JOUR 1200. 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/lab format. Offered every term. Camera rental optional.

JOUR 1550. Introduction to Digital Story Telling Technology 3 sem. hrs.
Principles and extensive practice in producing stories in basic digital formats for page layout with text and photos as well as for a web site with text, photographs, audio and video using contemporary software. Strategies and practice in applying journalism principles to building stories in varied formats. Developing news packages with multiple story forms. Reportorial strategies and responsibilities for accuracy, balance and fairness in developing and presenting story packages. *Prereq:* JOUR 1100.

JOUR 1964. 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 2100. 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 2200; or JOUR 1100.

JOUR 3986. 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 credits. *Prereq:* Jr. stndg.; JOUR major; and cons. of dept. ch. 0 credit will be SNC/UNC grade assessment; 1-3 credits will be S/U grade assessment.

JOUR 4110. Persuasive Writing 3 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 fall term. *Prereq:* Jr. stndg. and JOUR 2100 or equiv.

JOUR 4120. Feature 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. *Prereq:* Jr. stndg. and JOUR 2100 or equiv.

JOUR 4130. 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 spring term. *Prereq:* Jr. stndg. and JOUR 2100 or equiv.

JOUR 4140. Depth Reporting 3 sem. hrs.
In-depth research, analysis and reporting on a problem, issue or situation in the political, public, administrative, financial, educational, social or welfare aspects of a community. Use of public records, interviews, and observations. Building a news series, creating a package of news and editorial material. Offered fall term. *Prereq:* Jr. stndg. and JOUR 2100; or cons. of instr.

JOUR 4150. Investigative Reporting 3 sem. hrs.
Identification and development of a story or series or events exploring a problem in a public institution. Use of computer data bases, printed records and interviews to analyze a current situation. Developing a series which presents the problem and the perspectives of individuals involved and affected. Offered spring term. *Prereq:* JOUR 2100 or cons. of instr.

JOUR 4160. Narrative Nonfiction Reporting 3 sem. hrs.
Emphasizes longform journalism, stresses strong reporting, immersion in a single subject over the course of a semester, in-depth interviews and detailed observation. Students work individually, turning in portions of their work weekly. Produce a publishable 10,000 to 15,000 word article as the final project. *Prereq:* JOUR 2100 or equiv., cons. of instr.

JOUR 4200. Publications Editing 3 sem. hrs.
Editing principles and practices for print and online news publications. Editing copy, photos, charts and graphs; verification of information; writing headlines and captions. News judgment, wire services, back-pack journalism, digital newsroom; digital production software. *Prereq:* JOUR 2100; or ADPR 1800; or ENGL 3210; or cons. of dept. ch.

JOUR 4310. Communication of Urban Issues 3 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.

JOUR 4320. 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 media.

JOUR 4330. 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 4340. 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.

JOUR 4500. Newspaper Design and Production 3 sem. hrs.
Fundamentals of design and production for print and online newspapers. Students develop skills in working with separate and integrated print and online delivery systems. Introduction to digital forms of news content for online news publications: audio, video, slide shows and podcasts. Digital production software. Offered fall term. *Prereq:* JOUR 4200 or cons. of instr.

JOUR 4510. 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 spring term. *Prereq:* JOUR 4200; computer workshop or demonstrated proficiency on the Macintosh computer with current design software.

JOUR 4520. 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 special editing and design issues created by the online environment and internet technology. Legal and ethical issues on the Internet. Offered annually. *Prereq:* JOUR 4200; computer workshop or demonstrated proficiency on the Macintosh computer with current design software.

JOUR 4600. 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 fall term. *Prereq:* Jr. stndg.

JOUR 4700. 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 4800. 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/lab format. Journalism credit will be allowed for this course for all majors. *Prereq:* Jr. stndg. and JOUR 2100; or Jr. stndg. and BREC 2445 or equiv.

JOUR 4931. 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. *Prereq: Jr. stndg.*

JOUR 4953. Seminar in Journalism
1-3 sem. hrs.

Specific subjects of seminars to be announced in the *Schedule of Classes*. Variable topics.
Prereq: Jr. stndg.

JOUR 4995. Independent Study in Journalism 1-3 sem. hrs.

Prereq: Jr. stndg. and cons. of dept. ch.

JOUR 4999. 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 cons. of dept. ch.*

PERFORMING ARTS (PEAR)

Associate Professor Emeritus: Price

Adjunct Associate Professor: Krajec, Ravel

Adjunct Assistant Professor: Hudson-Mairet, Loeffler-Bell, Petersen

Lecturer: Brinkman-Sustach, Carpenter, Denning, Eubanks, Gray, Janners, Johnson, Kess, Kilmurry, Konewko, McGilligan, Rindt, Robbe, Salsini, Schneider, Smith

PEAR 2964. Performing Arts Practicum
0.5 sem. hrs.

Students will learn through practical application the basic elements of theatrical production. The purpose is to educate and train artists of the theatre and to provide for its students a foundation of professionalism and dedication to their art within a climate of diversity, discovery and risk. Practical application of stage craft, state properties, costumes, stage lighting, etc. by participation in acting and technical crews. Crew assignments will be a discretion of the faculty. Offered every term.

Dance (DANC)

DANC 1100. 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.

Prereq: THAR major or THAR minor or cons. of instr.

DANC 2320. Beginning Dance Technique 1
2 sem. hrs.

Emphasis will be placed on fundamental modern and jazz techniques. No previous dance needed. Offered fall term.

DANC 2340. Beginning Dance Technique 2
2 sem. hrs.

Continuation of DANC 2320. Offered spring term.
Prereq: DANC 2320 or equiv.

DANC 2420. Tap Dance 1 2 sem. hrs.

Emphasis will be placed on fundamental tap dance techniques. No previous tap dance needed. Offered fall term.

DANC 2440. Tap Dance 2 2 sem. hrs.

Continuation of DANC 2420.

Prereq: DANC 2420 or equiv.

DANC 2500. 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 3100. 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 spring term.

DANC 4953. Seminar in Dance 1-3 sem. hrs.

Specific subjects of seminars to be announced in the *Schedule of Classes*. Variable topics.

DANC 4995. Independent Study in Dance
1-3 sem. hrs.

Prereq: Cons. of dept. ch.

DANC 4999. 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.*

Film (FILM)

FILM 1931. Topics 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 *Schedule of Classes*.

FILM 2240. 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 2260. 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 2280. 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.

FILM 2290. 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.

FILM 2310. Film Production 3 sem. hrs.

Basic techniques in how to make a film. Emphasis on preproduction (script analysis, story-boarding, casting, rehearsing), directing, editing and postproduction of short narrative films. Utilizes the creative use of camcorders, microphones, and the Avid editing system. Lecture/lab format. Offered fall term.

Prereq: BREC 2205 and BREC 2335.

FILM 2620. 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 4953. Seminar in Film 1-3 sem. hrs.

Specific subjects of seminars to be announced in the *Schedule of Classes*. Variable topics.

FILM 4995. Independent Study in Film
1-3 sem. hrs.

Prereq: Cons. of dept. ch.

FILM 4999. 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.

Music (MUSI)

▲MUSI 1020. Appreciation of Music
3 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 1100. University Chorus 0-1 sem. hrs.

The University Chorus meets twice weekly and presents at least two major performances per term. The choir is comprised of three major components offering a singing opportunity to ALL interested singers. Literature encompassing a large variety of styles and genres is performed. Placement interviews are held the first three days of each new term. New singers to the program are asked to be registered in either the 0 credit or 1 credit section prior to their placement interview. Returning singers are not required to do an additional placement interview and are asked to be registered in either the 0 or 1 credit section prior to the first rehearsal. Rehearsals begin the first Thursday of each term. Offered annually. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded on A-F scale.

MUSI 1120. Liturgical Choir 0-1 sem. hrs.

Choir members concentrate on Liturgical music in rehearsals and concert performances. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded on A-F scale. *Prereq: Cons. of Instr.*

MUSI 1140. Chamber Choir 0 sem. hrs.

Chamber Choir is an auditioned choir of women who meet twice weekly. The choir performs regularly with other ensembles on campus and does at least two performances per term. The choir performs a large variety of styles and genres. Auditions are held during the first three days of the fall and spring term. SNC/UNC grade assessment.

MUSI 1160. Gospel Choir 0-1 sem. hrs.
Open to all students who qualify through audition held during fall registration week. Offered annually. Audition. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded on A-F scale.

MUSI 1200. Symphonic Band 0-1 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. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded.

MUSI 1220. Jazz Ensemble 0-1 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 1300 which must be taken concurrently; or MUSI 1200 which must be taken concurrently. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded on A-F scale.

MUSI 1300. Symphony Orchestra: Theatre Orchestra 0-1 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. 0 credit will be SNC/UNC grade assessment; 1 credit will be graded.

MUSI 1610. Carillon Discovery: An Introduction 3 sem. hrs.
In this introduction to the world of carillon, students explore the history, musical characteristics, bell foundries and carillons worldwide through readings, recordings, the internet and visits to the university carillon. This discovery is designed for a greater appreciation of the carillon for both musicians and non-musicians.

MUSI 2410. Music History 3 sem. hrs.
Survey of the growth and development of Western Art Music from antiquity to the present time. Includes discussion of Medieval and Renaissance music, the Baroque Classical and Romantic periods, twentieth century and twenty-first century music. Offered fall term of odd-numbered years.
Prereq: MUSI 2500 and MUSI 3500.

▲MUSI 2420. 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 fall term. Credit may be applied towards a Film minor.

MUSI 2440. 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 2460. Wind Band History and Analysis 3 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 1200; or cons. of instr.*

MUSI 2500. Music Theory 1 3 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 2910. The Business of Music 3 sem. hrs.
Comprehensive overview of the practical aspects of the music industry. Marketing, production and distribution, resume preparation, economics of the music business and issues of taxation.

MUSI 3500. Music Theory 2 3 sem. hrs.
Study of more advanced concepts of music theory, including modulation, chromaticism, altered chords, modal mixture, atonality, 12-tone composition, and other modernistic compositional techniques. Offered spring term. *Prereq: MUSI 2500.*

MUSI 3610. Conducting 3 sem. hrs.
Class instruction in the basic skills of the art of conducting. Covers the manual technique of conducting, including patterns, style, fermatas, accents and expressive techniques. Includes concepts of score study interpretation, and leadership.
Prereq: MUSI 2410.

MUSI 4953. Seminar in Music 1-3 sem. hrs.
Specific subjects of seminars to be announced in the *Schedule of Classes*. Variable topics.

MUSI 4995. Independent Study in Music 1-3 sem. hrs.
Prereq: Cons. of dept. ch.

MUSI 4999. 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.

Theatre Arts (THAR)

▲THAR 1020. 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 1100. 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 fall term. Lab required.
Prereq: THAR major or THAR minor; or cons. of instr.

THAR 1120. Acting 2: Characterization 3 sem. hrs.
A continuation of the work begun in THAR 1100; refinement of the script analysis and research for the actor as well as exploration of the physical self in creating and developing a character for the stage through scene and monologues. Offered spring term of even-numbered years. Lab required.
Prereq: THAR 1100.

THAR 1150. 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 1300. Stagecraft 3 sem. hrs.
The basic techniques of stagecrafts including construction of scenery and props, painting and rigging, lighting and running of shows. Offered fall term.
Prereq: THAR 1310 must be taken concurrently.

THAR 1310. Stagecraft Practicum 0.5 sem. hrs.
Stagecraft practicum provides hands-on training of basic techniques of stagecraft in construction of scenery and props, painting and rigging, lighting and running of shows. S/U grade assessment. Offered every term. *Prereq: Must be concurrently enrolled in THAR 1300.*

THAR 1320. 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 term.
Prereq: THAR 1330 must be taken concurrently.

THAR 1330. Basic Costume Technology Practicum 0.5 sem. hrs.
Basic Costume Technology Practicum provides hands-on training for primary costuming techniques including hand and machine sewing. S/U grade assessment. Offered every term.
Prereq: Must be concurrently enrolled in THAR 1320.

THAR 1340. Make-Up 3 sem. hrs.
The fundamental techniques of stage makeup through using a variety of materials and exercises. Offered fall term.

THAR 2100. 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 every term. Lab required. *Prereq: THAR 1120.*

THAR 2140. 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 every term. *Prereq: THAR 1100.*

THAR 2160. 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 2140.*

THAR 2180. Acting for Camera 3 sem. hrs.

Basic Film/TV technique for the beginning camera actor, including: blocking, use of set/location, and analysis and illustration of scripts. Introduction to terminology and basic technical skills in camera/microphone usage and performance recording. Offered spring term. *Prereq: Theatre majors and minors only; THAR 2100 or cons. of instr.*

THAR 2320. 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 alternate spring terms. *Prereq: THAR 1300; or cons. of instr.*

THAR 2400. 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. stndg. and THAR 1300; or cons. of instr.*

THAR 2500. Play Direction 3 sem. hrs.

The principles of play direction as a creative and interpretative art on the stage. Offered fall term. *Prereq: THAR 1100 and cons. of instr.*

THAR 2600. Play Analysis 1 3 sem. hrs.

Analyzes tragedy and comedy. Emphasis on performance, drama theory, and historical context of plays. Offered fall term.

THAR 3100. 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. Offered spring term. Lab required. *Prereq: THAR 2140 and THAR 2100; or cons. of instr.*

THAR 3953. 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. S/U grade assessment. *Prereq: THAR major.*

THAR 4100. 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. Lab required. *Prereq: THAR 2140 and THAR 3100 and cons. of instr.*

THAR 4200. History of Theatre 3 sem. hrs.

A chronological survey of theatre history from its origins to 1914. Particular emphasis paid to major periods of theatrical achievement, studying conjectural and documented styles in acting, design and production methods. Offered spring term. *Prereq: Soph. stndg.*

THAR 4210. 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 spring term of even-numbered years. *Prereq: Soph. stndg.*

THAR 4220. 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 fall term of odd-numbered years.

THAR 4230. 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 fall term of even-numbered years.

THAR 4240. 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.

THAR 4320. 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.

THAR 4340. Advanced Costume Technique 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 term.

Prereq: THAR 1320; or cons. of instr.

THAR 4360. Theatre Management 3 sem. hrs.

Study and practice of Theatre Management and Publicity. Offered fall term. Lab requirement in production and/or stage management.

THAR 4380. Computer Applications for the Theatre 3 sem. hrs.

The study and use of various software packages to support the principles of scenic, lighting, and costume design. An introduction to the development of theatrical design presentation using digital technology. Explores the use of digital tools in drafting, modeling, and rendering skills as a means towards basic theatrical design. Offered spring term of odd-number years.

THAR 4400. 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 alternate spring terms.

Prereq: THAR 2400; or cons. of instr.

THAR 4420. 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 1300; or cons. of instr.*

THAR 4440. 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 2400; or cons. of instr.

THAR 4500. 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 spring term. *Prereq: THAR 2500; or cons. of instr.*

THAR 4600. 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 fall term of odd-numbered years.

THAR 4953. Seminar in Theatre Arts

1-3 sem. hrs.

Specific subjects of seminars to be announced in the *Schedule of Classes*. Variable topics.

THAR 4961. Independent Project in Theatre Arts

0-3 sem. hrs.

Offered every term.

Prereq: Cons. of instr. 0 credit will be SNC/UNC grade assessment; 1-3 credits will be graded.

THAR 4986. Internship in Theatre Arts

0-3 sem. hrs.

S/U grade assessment. *Prereq: Cons. of dept ch.*

THAR 4995. Independent Study in Theatre Arts

1-3 sem. hrs.

Prereq: Cons. of dept. ch.; cons. of artistic director.

THAR 4997. Senior Capstone 3 sem. hrs.

In order to demonstrate artistic proficiency, students go beyond what has been learned in the classroom, studio, and stage, and begin to replicate the world students will encounter upon graduation. A capstone project requires student to utilize not only their core skills but to develop new "real world" skills they will need in their profession, such as decision making, presentation, and communication skills. This project incorporates and synthesizes knowledge gained through coursework within the Performing Arts curriculum. Senior Capstone Projects normally take place in the spring of the final year of study.
Prereq: THAR major and Sr. stndg.

THAR 4999. Senior Thesis 1-3 sem. hrs.

The application of rigorous methodology in developing and writing a thesis under the direction of an adviser. Offered fall term. *Prereq: Cons. of dept ch.*

College of Education

The College 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 College 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 instructing small groups 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 College 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. 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, College of Education course goals and objectives are carefully aligned with the 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. All education students will be assigned to an adviser in the College of Education as well as to an adviser in their academic content area. The bachelor of science degree is conferred by the College of Education.

The degrees of master of arts, master of education, and doctor of philosophy are offered by the College of Education through the Marquette University Graduate School. The College of Education also offers the following certificates: principal, director of instruction, superintendent, reading teacher, reading specialist, middle childhood/early adolescence (grades 1-8) education, and early adolescence/adolescence (grades 6-12) education. Details for these programs are contained in the *Graduate Bulletin*.

ADMISSION REQUIREMENTS

Students must apply for formal admission to the Teacher Education Program through the Office of Teacher Education located in the College of Education. The admission and retention

requirements at Marquette University meet the requirements established by the Wisconsin Department of Public Instruction.

To be formally admitted to the Teacher Education Program students must:

- Achieve a GPA of 2.500 in a minimum of 40 credits of undergraduate course work.
- Obtain passing scores on the Praxis I Academic Skills Test.
- Complete EDUC 1210, EDUC 1220, EDUC 2227, ENGL 1001, and ENGL 1002 or COMM 1100 with a minimum grade of C.
- Demonstrate proficiencies through the submission of selected assignments associated with courses in the professional education sequence.

Applications for admission to the program are reviewed frequently. Students who do not meet the state mandated 2.500 GPA requirement may apply and file an appeal for admission under the 10 percent rule provided the remaining requirements have been met. Further, students who do not achieve passing scores on all three components of the Praxis I assessment (after a minimum of two attempts) may apply and file an appeal for admission under the 10 percent rule provided the remaining requirements have been met. The state allows each institution to admit up to 10 percent of its students who have not achieved the required grade point average or passed the Praxis I assessment.

RETENTION IN PROGRAM

The Wisconsin Department of Public Instruction requires that students achieve an a cumulative 2.750 GPA and a 2.750 GPA in their major, minor, and professional education sequence as well as obtain passing scores on the appropriate Praxis II content area test in order to be approved for student teaching and to be licensed. The College of Education does not accept courses with a grade of CD or lower to meet the requirement in the professional education sequence. Courses with these grades must be repeated. Anyone with questions related to admission or retention should contact the Office of Teacher Education. While the admission requirements apply to all students, the College of Education reserves the right to deny admission or retention to students who demonstrate unprofessional behavior.

ACCREDITATION

The College of Education is a member of the American Association of Colleges for Teacher Education. All programs are accredited by the North Central Association, the State of Wisconsin and the National Council for Accreditation of Teacher Education.

CERTIFICATION

The Wisconsin Department of Public Instruction approves the teacher preparation program offered by Marquette University. This approval includes the middle childhood/early adolescence (grades 1-8) sequence, the early adolescence/adolescence (grades 6-12) sequence, and the majors and minors described in the following pages. A student who satisfactorily completes an education major (professional course sequence) and an academic major, demonstrates mastery of the College of Education standards as evidenced by satisfactory performance on selected assignments, and obtains passing scores on the appropriate Praxis II content area test can be recommended for certification in the state of Wisconsin. Completion of course work is a necessary but not sufficient condition for certification. The professional judgment of faculty, supervisors, and Teacher Education Program administrators enter into the final decision. A student must complete an application for certification and pay a processing fee to the Wisconsin Department of Public Instruction. Applications are available in the Office of Teacher Education, Schroeder Complex, 146.

Changes mandated 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 after graduation should recognize that reciprocal certification agreements with other states change from time to time. The student should directly contact the respective state's department of education to obtain its certification requirements and licensure application procedures. If specific courses are needed for certification other than those required for Wisconsin, students should plan their programs of study accordingly. Certification levels available to Marquette students are middle childhood/

early adolescence (grades 1-8) and early adolescence/adolescence (grades 6-12). Students should check with the Office of Teacher Education for the requirements and availability of each level for the different majors and minors.

FIELD EXPERIENCES

Education students participate in field experiences at public, private, and parochial schools in the Milwaukee area. The Department of Public Instruction requires a minimum of 100 field hours to be completed prior to student teaching. Of these, the College of Education requires that a minimum of 50 hours must be completed in diverse settings with individuals whose backgrounds differ from those of the field students. Although Marquette University's field experience requirements exceed those mandated by the Wisconsin Department of Public Instruction, students must satisfy Marquette's requirements. Marquette University's College of Education has established close, working relationships with several schools in the greater Milwaukee area. 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

PARENTING CENTER

The Parenting Center offers outreach training and services to the community on parenting young children. Through its community-based Behavior Clinic, psychoeducational services are provided to families who have children under five years of age with significant mental health needs. Graduate students participate in all aspects of the clinic and undergraduates work with these children in their preschool programs. The center also conducts applied research programs to inform the community regarding best clinical practices.

THE RALPH C. HARTMAN LITERACY AND LEARNING CENTER

The Hartman Literacy and Learning Center is a facility within the College of Education which supports undergraduate and graduate literacy related programs. The center library houses a children's literature collection which is used by the College of Education students as well as children and families participating in the Marquette University Family Literacy Project, a collaboration between the university and neighborhood elementary schools. Students enrolled in EDUC 4964 (Practicum 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.

A criminal background check is required of each student prior to student teaching. In addition, applicants for Wisconsin state teaching licensure are checked through the Wisconsin Criminal Investigation Bureau. Drug testing may also be required.

CURRICULA INFORMATION

MIDDLE CHILDHOOD/EARLY ADOLESCENCE TEACHER PREPARATION (GRADES 1-8)

The middle childhood/early adolescence teacher education program leads to a teaching license for grades 1 through 8. Students who select this program must meet the College of Education's admission and retention requirements and must complete the following components:

1. The University Core of Common Studies
2. An Elementary/Middle Education major which includes specific state-mandated general education requirements
3. An academic major from the Klingler College of Arts and Sciences or the Diederich College of Communication

Students who intend to complete the teacher education program through the Marquette University College of Education are strongly encouraged to meet with the Director of Undergraduate Advising in the Office of Teacher Education as early as possible to avoid delays in their program.

ACADEMIC MAJORS

KLINGLER COLLEGE OF ARTS AND SCIENCES

| | |
|---------|-------------------|
| English | Mathematics |
| French | Political Science |
| German | Psychology |
| History | Sociology |
| Latin | Spanish |

DIEDERICH COLLEGE OF COMMUNICATION

Communication Studies Journalism Theatre Arts

UNIVERSITY CORE OF COMMON STUDIES / EDUCATION CORE REQUIREMENTS

| | |
|--|--------------------|
| Rhetoric (R) | 6 credits |
| ENGL 1001 and ENGL 1002 or COMM 1100 | |
| Mathematical Reasoning (MR) | 7 credits |
| MATH 2030 and MATH education sequence: MATH 2031 and 2032 | |
| Individual and Social Behavior (ISB) | 3 credits |
| POSC 2201 | |
| Diverse Cultures (DC) | 3 credits |
| EDUC 1210 | |
| Literature and Performing Arts (LPA) | 3 credits |
| Any course approved for the UCCS. | |
| Histories of Cultures and Societies (HCS) | 6 credits |
| HIST 1101 and HIST 1301, 1401, or 1501 | |
| Science and Nature (SN) | 8 credits |
| ARSC 1020 and ARSC 1021 | |
| Human Nature and Ethics (HNE) | 6 credits |
| PHIL 1001 and PHIL 2310 | |
| Theology (T) | 6 credits |
| THEO 1001 and THEO 2000-2410 elective from approved UCCS list | |
| Additional College Curriculum Requirements. | 0-8 credits |
| Foreign Language competence through the elementary college level | |

▲ Indicates UCCS courses in course descriptions.

ELEMENTARY/MIDDLE EDUCATION MAJOR

To be eligible for an middle childhood/early adolescence teaching license, students must complete the following courses offered by the College of Education: EDUC 1210, EDUC 1964, EDUC 2964, EDUC 1220, EDUC 2227, EDUC 4217, EDUC 2330, EDUC 4357, EDUC 4297, EDUC 4317, EDUC 3240, EDUC 4540, EDUC 4964 and EDUC 4966. Students must also complete MATH 2030, MATH 2031, and MATH 2032 offered by the Mathematics Department. Students must check with their advisers in the College of Education with regard to sequence and admission requirements. Student Teaching, EDUC 4966, 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.

EARLY ADOLESCENCE/ADOLESCENCE TEACHER PREPARATION (GRADES 6-12)

The early adolescence/adolescence teacher education program leads to a teaching license for grades 6 through 12. Students who select this program must meet the College of Education's admission and retention requirements and must complete the following components:

1. The University Core of Common Studies
2. A Middle/Secondary Education major which includes specific state-mandated education requirements
3. An academic major from the Klingler College of Arts and Sciences or the Diederich College of Communication

The approved majors and minors for teaching certification through Marquette have been cooperatively developed by the College of Education and the colleges and departments of the university. All students intending to teach at the early adolescence/adolescence level must complete at least one academic major in addition to their Middle/Secondary Education major.

Students who intend to complete the teacher education program through the Marquette University College of Education are strongly encouraged to meet with the Director of Undergraduate Advising in the Office of Teacher Education as early as possible to avoid delays in their program.

ACADEMIC MAJORS

KLINGLER COLLEGE OF ARTS AND SCIENCES ACADEMIC MAJORS

| | | |
|---------------------|-------------|-------------------|
| Biology | German | Political Science |
| Broad Field Science | History | Psychology |
| Chemistry | Latin | Sociology |
| English | Mathematics | Spanish |
| French | Physics | |

DIEDERICH COLLEGE OF COMMUNICATION ACADEMIC MAJORS

| | | |
|-----------------------|------------|--------------|
| Communication Studies | Journalism | Theatre Arts |
|-----------------------|------------|--------------|

UNIVERSITY CORE OF COMMON STUDIES / EDUCATION CORE REQUIREMENTS

| | |
|--|--------------------|
| Rhetoric (R) | 6 credits |
| ENGL 1001 and ENGL 1002 or COMM 1100 | |
| Mathematical Reasoning (MR) | 3 credits |
| Any MR course approved for the UCCS | |
| Individual and Social Behavior (ISB) | 3 credits |
| Any ISB course approved for the UCCS | |
| Diverse Cultures (DC) | 3 credits |
| EDUC 1210 | |
| Literature and Performing Arts (LPA) | 3 credits |
| Any literature course approved for the UCCS | |
| Histories of Cultures and Societies (HCS) | 6 credits |
| HIST 1001 or HIST 1002 and HIST 1301, 1401, or 1501 | |
| Science and Nature (SN) | 8 credits |
| ARSC 1020 and ARSC 1021 | |
| Human Nature and Ethics (HNE) | 6 credits |
| PHIL 1001 and PHIL 2310 | |
| Theology (T) | 6 credits |
| THEO 1001 and THEO 2000-2410 elective approved for the UCCS list | |
| Additional College Curriculum Requirements | 0-8 credits |
| Foreign Language competence through the elementary college level. | |
| Additional Wisconsin Department of Public Instruction Requirement | 3 credits |
| Fine Arts | |

▲ Indicates UCCS courses in course descriptions.

SPECIAL NOTE: Broad Field Social Science Minor

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 2203). 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 College of Education adviser 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 general social studies courses and "fusion" courses such as civics, contemporary problems, and social problems.

**SPECIAL NOTE: Broad Field Science 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 advisers, and the College of Education Director of Undergraduate Advising.

Students completing all of the course work earn a broad field science teaching major and a teaching minor in their science area of study.

Courses common to all broad field science majors are BIOL 1001, 1002, 2001, CHEM 1001, 1002, 2111 (or 2113), PHYS 1001 (or 1003 or 1013), 1002 (or 1004 or 1014), 1008. In addition,

1. Biology minors take CHEM 2112 (or 2114), BIOL 3101, 2201 and one additional course in biology, MATH 1410 or 1450 and one additional MATH or COSC course.
2. Chemistry minors take CHEM 2112 (or 2114), 2210, BIOL 3101, MATH 1410 or 1450, and COSC 1001.
3. Physics minors take PHYS 2004, 2005, and MATH 1450, 1451, 2450.

MIDDLE/SECONDARY EDUCATION MAJOR

To be eligible for an early adolescence/adolescence teaching license, students must complete the following courses in the College of Education: EDUC 1210, EDUC 1220, EDUC 2227, EDUC 4217, EDUC 2037, EDUC 4297, EDUC 3240, EDUC 4540, EDUC 4965, and one advanced methods course in their teaching major/minor. Students must check with their advisers in the College of Education in regard to sequence and admission requirements. Student Teaching, EDUC 4965, 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.

COACHING COURSES

Students enrolled in a teaching program in the College of Education may seek to enhance their job opportunities by enrolling in coaching courses: 1600, 1700 and 1800.

ELEMENTARY/MIDDLE EDUCATION

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|--|-----------|
| ARSC 1020 (UCCS – Science and Nature) | 4 | ARSC 1021 | 4 |
| ENGL 1001 (UCCS – Rhetoric) | 3 | ENGL 1002 or COMM 1100 (UCCS – Rhetor) 3 | |
| FOLA 1 Foreign Language 1 | 4 | FOLA 2 Foreign Language 2 | 4 |
| THEO 1001 (UCCS – Theology) | 3 | HIST 1101 (UCCS – Hist. of Cultures/Soc) . . . 3 | |
| EDUC 1210 (UCCS – Diverse Cultures) | 3 | EDUC 1220 | 3 |
| | 17 | | 17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|---|-----------|
| UCCS – Literature and Performing Arts | 3 | POSC 2201 (UCCS – Ind. & Social Behavior) . 3 | |
| HIST 1301, 1401, or 1501 Non-western Hist. .3 | | THEO 2000-2410 (UCCS – Theology) 3 | |
| Major | 3 | PHIL 1001 (UCCS – Human Nature & Ethics) 3 | |
| Major | 3 | Major | 3 |
| EDUC 2227 | 3 | Major | 3 |
| Field Experience I | | EDUC 2330 | 3 |
| | 15 | | 18 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|--|-----------|
| MATH 2030 (UCCS – Math. Reasoning) | 3 | MATH 2031 and EDUC 1964 | 3 |
| PHIL 2310 (UCCS Human Nature & Ethics) .3 | | Major | 3 |
| Major | 3 | Major | 3 |
| Major | 3 | EDUC 3240 | 3 |
| EDUC 2347 | 4 | EDUC 4357 | 4 |
| EDUC 4217 | 3 | EDUC 4317 | 3 |
| Field Experience II | | Field Experience III | |
| | 19 | | 19 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|---|-----------|
| MATH 2032 and EDUC 2964 | 3 | EDUC 4966 Student teaching | 12 |
| Major | 3 | | |
| Major | 3 | | |
| EDUC 4964 | 4 | | |
| EDUC 4297 | 4 | | |
| EDUC 4540 | 3 | | |
| Senior Level Practicum | | | |
| | 20 | | 12 |

Total credit hours: 137

Please note: Some majors may require more MAJOR courses than the number of MAJOR courses listed.
 EDUC courses in **bold** require fieldwork.

MIDDLE/SECONDARY EDUCATION

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|---|-----------|
| ARSC 1020 (UCCS – Science and Nature) | 4 | ARSC 1021 | 4 |
| ENGL 1001 (UCCS – Rhetoric) | 3 | ENGL 1002 or COMM 1100 (UCCS – Rhetor) . 3 | |
| FOLA 1 Foreign Language 1 | 4 | FOLA 2 Foreign Language 2 | 4 |
| THEO 1 (UCCS – Theology) | 3 | HIST 1301, 1401, or 1501 Non-western Hist . . 3 | |
| EDUC 1210 (UCCS – Diverse Cultures) | 3 | EDUC 1220 | 3 |
| | 17 | | 17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|---|-----------|
| HIST 1001 or 1002 (UCCS – Hist of Cult/Soc) . 3 | | UCCS – Individual and Social Behavior | 3 |
| MATH (UCCS – Mathematical Reasoning) . . . 3 | | PHIL 1001 (UCCS – Human Nature & Ethics) . 3 | |
| Major | 3 | Major | 3 |
| Major | 3 | Major | 3 |
| EDUC 2227 Using Tech for Learning | 3 | Elective | 3 |
| Field Experience I | | | |
| | 15 | | 15 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--|-----------|--|-----------|
| PHIL 2310 (UCCS–Human Nature & Ethics) . . 3 | | THEO 2000-2410 (UCCS – Theology) | 3 |
| Major | 3 | Literature (UCCS – LPA any approved lit) 3 | |
| Major | 3 | Major | 3 |
| Elective | 3 | Major | 3 |
| EDUC 3240 | 3 | EDUC 4540 | 3 |
| EDUC 4217 | 3 | EDUC 4297 | 4 |
| Field Experience II | | Junior Level Practicum | |
| | 18 | | 19 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|---|-----------|
| Fine arts elective | 3 | EDUC 4965 Student Teaching | 12 |
| Major | 3 | | |
| Major | 3 | | |
| EDUC 2037 | 3 | | |
| Advanced methods | 3 | | |
| Elective if needed to reach 128 credits | | | |
| Field Experience III | | | |
| | 15 | | 12 |

Total credit hours: 128

Please note: Some majors may require more MAJOR courses than the number of MAJOR courses listed.
EDUC courses in **bold** require fieldwork.

COURSE DESCRIPTIONS

Dean and Professor: Henk

Associate Dean and

Director of Teacher Education: Cepelka

Professor: Fox, Lowe, Pink

Distinguished Professor: Fuller

Professor Emeriti: Augenstein, Dupuis, Ivanoff, Leslie, Thompson

Associate Professor: Bardwell, Eckman, Schweizer, Walker-Dalhouse, Whip

Assistant Professor: Burant, Chubbuck, Clark, Labelle, Lopez, Scanlan, van den Kieboom

Director of Undergraduate Advising: McNamara

Director of Field Placements and Licensure: Stang

Director of Graduate Studies: Whip

▲EDUC 1210. 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 1220. 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 1500. 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 1600. 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 1700. 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 1800. 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 1953. The Dynamics of Cross Cultural Engagement 1 1.5 sem. hrs.

Seminar provides an academic component for the cross-cultural residence hall experience, Inclusive Leadership CommUNITY. Residence hall brings together majority and minority first year students selected because of their interest in being engaged in cross-cultural experiences in and out of the classroom. Requires attendance at designated extramural cultural events such as movies, plays, lectures or community outings, including a weekend retreat on diversity issues. Students read and discuss articles and books, keep journals, and reflect on cross-cultural experiences. Written assignments provide opportunities to demonstrate achievement of course goals. Offered fall term.

Prereq: Enrollment in the residence hall Inclusive Leadership CommUNITY program.

▲EDUC 1954. The Dynamics of Cross Cultural Engagement 2 1.5 sem. hrs.

Seminar, building on EDUC 1953, provides an academic component for the cross-cultural residence hall experience, Inclusive Leadership CommUNITY. Requires attendance at designated extramural cultural events such as movies, plays, lectures or community outings, including a weekend retreat on diversity issues. Students read and discuss articles and books, keep journals, and reflect on cross-cultural experiences. Written assignments provide opportunities to demonstrate achievement of course goals. Offered spring term.

Prereq: Enrollment in the residence hall Inclusive Leadership CommUNITY program.

EDUC 1964. Elementary Mathematics Field Study 1 sem. hr.

Prepares students to teach mathematics in the elementary grades through a problem solving approach. Guided participation in an elementary mathematics classroom with practicing teacher and university instructor for twenty hours of fieldwork.

Prereq: MATH 2030. This course should be taken concurrently with MATH 2031.

EDUC 2037. Literacy in the Content Areas 3 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.

Prereq: Admission to the Professional Program in the College of Education.

EDUC 2227. Introduction to Learning and Assessment 3 sem. hrs.

Application of major theories of learning to instructional planning and assessment. Use of technologies to enhance learning and assessment. Offered every term.

EDUC 2330. 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.

Prereq: EDUC 2227; Admission to the Professional Program in the College of Education.

EDUC 2347. Teaching Elementary Reading, Language Arts and Children's Literature 1 4 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 required. *Prereq:* Admission to the Professional Program in the College of Education.

EDUC 2964. Middle School Mathematics Field Study 1 sem. hr.

Prepares students to teach middle school mathematics through a problem solving approach. Guided participation in a middle school mathematics classroom with practicing teacher and university instructor for twenty hours of fieldwork.

Prereq: MATH 2031. This course should be taken concurrently with MATH 2032.

EDUC 3100. 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 childrearing practices, intergenerational parenting, legal issues, parenting exceptional children, and current topics.

EDUC 3150. 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.

EDUC 3175. 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. Only for students in certification programs endorsed by the College of Education.

▲EDUC 3240. Critical Inquiry into Contemporary Issues 3 sem. hrs.

Analysis and critique of current issues in elementary, middle, and secondary education. Skill development in research, communication, and critical inquiry needed to foster social justice in schools. Offered every term. *Prereq:* EDUC 1210.

EDUC 4007. Teaching Middle/Secondary Social Science 3 sem. hrs.

Application of teaching methods to social studies in middle and high schools. Field experience required. Offered fall term only. *Prereq: EDUC 2227; Admission to the Professional Program in the College of Education.*

EDUC 4017. Teaching Middle/Secondary Science 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 2227; Admission to the Professional Program in the College of Education.*

EDUC 4067. 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. Open to all upper division students in the university. Admission to the Professional Program in the College of Education required.

EDUC 4100. Foundations of Catholic Education 3 sem. hrs.

Traces the history and philosophy of Catholic education in the United States, with particular emphasis on the identity, mission and culture of Catholic schools as interpreted by generations of Church leaders and scholars. Prepares elementary and secondary pre-service teachers to apply educational theory to practice in the Catholic school settings.

EDUC 4217. Children and Youth with Exceptional Needs 3 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 1220 or equiv.*

EDUC 4230. Learning and Linguistic Diversity 3 sem. hrs.

Covers three bodies of knowledge regarding language: basic principles of sociolinguistics, the nature of learning a second language or a second dialect, and theories of effective methods for teaching speakers of languages and dialects other than Standard English (e.g., bilingual education and/or English as a second language instruction). Each of these bodies of knowledge will be contextualized in students' learning experiences and in teachers' classroom practices.

EDUC 4297. Teaching in the Middle School 4 sem. hrs.

Foundations, methods, and strategies for teaching at the middle school level. Lab required. Field experience required. *Prereq: EDUC 1220 and EDUC 2227; Admission to the Professional Program in the College of Education.*

EDUC 4317. Teaching Elementary Level Science 3 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 2227; Admission to the Professional Program in the College of Education.*

EDUC 4337. Teaching Elementary Social Studies 1-3 sem. hrs.

Curriculum development, instructional strategies and techniques for teaching elementary social studies with emphasis on primary research skills. Includes preparation of materials, assessment and micro-teaching. Offered fall term. *Prereq: EDUC 2227; Admission to the Professional Program in the College of Education.*

EDUC 4357. Teaching Elementary Reading, Language Arts and Children's Literature 2 4 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 required. *Prereq: EDUC 2347; Admission to the Professional Program in the College of Education.*

EDUC 4540. 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 1001.*

EDUC 4931. Topics in Education 1-4 sem. hrs. Various topics in education as identified in the *Schedule of Classes.*

EDUC 4964. 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. *Prereq: Cons. of dept. ch.; Admission to the Professional Program in the College of Education.*

EDUC 4965. Student Teaching: Middle/Secondary 12 sem. hrs.

Full day, full term of public or private school teaching, Monday through Friday. Only EDUC 4540 may be taken during the term of this practicum. Regular on-site visitation by university faculty. Weekly seminar required. S/U grade assessment. Fee. *Prereq: EDUC 4297 and cons. of dept. ch. Advanced methods course.*

EDUC 4966. Student Teaching: Elementary/Middle 6-12 sem. hrs.

Full day, half or full term of public or private school teaching, Monday through Friday. Only EDUC 4540 may be taken during this practicum. Regular on-site visitation by university faculty. Weekly seminar required. S/U grade assessment. Fee. *Prereq: EDUC 4297 and cons. of dept. ch.*

EDUC 4968. Student Teaching: Middle/Secondary Foreign Language 6 sem. hrs.

Full day, half term of public or private school teaching, Monday through Friday. EDUC 4540 may be taken during the term of this practicum. Regular on-site visitation by University faculty. Weekly seminar required. S/U grade assessment. Fee. *Prereq: EDUC 4297 and cons. of dept. ch.; admission to the College of Education.*

EDUC 4995. Independent Study in Education 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. *Prereq: Cons. of dept. ch.*

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 Engineering. Engineering students have the opportunity to earn a minor in another engineering field as well as in many other non-engineering areas.

The master of science degree is conferred upon recommendation by the Graduate School for candidates in biomedical, civil, electrical and computer, and mechanical engineering, and for candidates in health care technologies management. The master of engineering (M.E.) degree is conferred for candidates in biomedical engineering, the master of science in engineering management (M.S.E.M.) degree is conferred for candidates in engineering management, and the doctoral degree is conferred for candidates in biomedical, civil, electrical and computer, and mechanical engineering. Five certificates are offered in civil engineering and four certificates are offered in electrical engineering. Details on the master's, doctoral and certificate programs are contained in the *Graduate Bulletin*.

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, environmental engineering and construction engineering and management; 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 Engineering with a major in mechanical engineering.

ACCREDITATION

The College of Engineering is a member of the American Society for Engineering Education. The biomedical, civil, computer, electrical and mechanical engineering programs are accredited by the Engineering Accreditation Commission of ABET; 111 Market Place, Suite 1050; Baltimore, MD 21202-4012; telephone: (410) 347-7700.

The construction engineering and management program is eligible for accreditation after its first graduating class.

ADMISSION REQUIREMENTS

Freshman Admission: Freshman applicants to the College of Engineering 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 grade average of 2.500 (based on a four-point system) in previous college work as a minimum of consideration. An applicant's entire academic performance will be evaluated in making an admission decision.

ADVANCED STANDING

The College of Engineering maintains formal agreements with various colleges for student transfer into selected engineering degree programs and for the transfer of advanced standing credits. The following institutions have engaged the College of Engineering to develop a structure for either 2+2, Pre-engineering or Dual Degree arrangements.

| | |
|--|---------------------|
| Fox Valley Technical College, Appleton, Wisconsin | 2+3 Program |
| Waukesha County Technical College, Waukesha, Wisconsin | 2+2 Program |
| Gateway Technical College, Racine, Wisconsin | 2+3 Program |
| Creighton University, Omaha, Nebraska | Pre-engineering |
| Spring Hill College, Mobile, Alabama | Dual Degree Program |

For more information contact the office of the associate dean for academic affairs.

GRADUATION REQUIREMENTS

The degree bachelor of science in biomedical, civil, computer, electrical or mechanical engineering may be conferred on students who successfully complete a curriculum as prescribed for the degree, and who have satisfied the following requirements:

- A minimum of 32 hours of upper division course work must be completed at Marquette University. At least 15 hours must be either within the major or the required department courses shown in the senior year of the catalog showcase curriculum.
- A cumulative 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 office of the associate dean for academic affairs no later than two weeks after the beginning of the candidate's last term.

GENERAL DEGREE REQUIREMENTS

All candidates for a baccalaureate degree in engineering must complete requirements for one of the majors on the following pages:

Department of Biomedical Engineering

Biocomputing
Bioelectronics
Biomechanics

Department of Civil and Environmental Engineering

Civil Engineering
Construction Engineering and Management
Environmental Engineering

Department of Electrical and Computer Engineering
 Computer Engineering
 Electrical and Computer Engineering
 Electrical and Electronic Engineering
 Department of Mechanical Engineering
 Mechanical Engineering

UNIVERSITY CORE OF COMMON STUDIES (UCCS) AND COLLEGE OF ENGINEERING CURRICULAR REQUIREMENTS

The College of Engineering curricula amplify and deepen the University Core of Common Studies (UCCS) requirements which are fully described in the 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.
- f The Core Rhetoric Knowledge Area is satisfied by ENGL 1001, and ENGL 1002 or COMM 1100.

Courses which satisfy both the UCCS and the College of Engineering curricula are outlined below:

| | |
|--|--------------------|
| Rhetoric (R) | 6 credits |
| ENGL 1001, and ENGL 1002 or COMM 1100 | |
| Mathematical Reasoning (MR) | 4-8 credits |
| MATH 1450 | |
| 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) | 12 credits |
| CHEM 1001, PHYS 1003, PHYS 1004 | |
| Human Nature and Ethics (HNE) | 6 credits |
| PHIL 1001, PHIL 2310 | |
| Theology (T) | 6 credits |
| THEO 1001, Theology Elective | |

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/programs/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 college regulations. For College of Engineering policies, please refer to our Web site at www.marquette.edu/engineering/pages/AllYouNeed/academicpolicies.html.

ACADEMIC HONESTY

The College of Engineering recognizes that any form or degree of academic dishonesty challenges the principles of truth and honesty which are among the most important foundation principles of Marquette University. Consequently, the college treats matters of academic dishonesty as serious violations of academic trust and penalizes all students found to engage in such behavior. The reduction of academic dishonesty within the College of Engineering must be a cooperative enterprise of faculty, student and administrators.

Refer to the University Academic Honesty Policy and Procedures in the front section of this bulletin.

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 office of the associate dean for academic affairs, 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.marquette.edu/engineering/pages/AllYouNeed/academicpolicies.html.

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 associate dean for academic affairs on forms available on the Office of the Registrar Web site, www.marquette.edu/registrar/policies.

OTHER ACADEMIC POLICIES

For a complete list of all College of Engineering academic policies, please refer to our Web site at www.marquette.edu/engineering/pages/AllYouNeed/academicpolicies.html.

SPECIAL ACADEMIC PROGRAMS

THE COOPERATIVE EDUCATION PROGRAM

The Cooperative Education Program is an organized program integrating classroom work and practical work experience. Students in this program alternate periods of attendance at college with periods of employment in industry. The employment constitutes a regular, continuing, and desirable element in the educational process. It is related to some phase of the field of study in which the student is engaged and should be diversified to afford a range of experience. The objective is balanced training; the combination of theory and practical work experience during the early years of professional development. The Engineering Cooperative Education Program (Co-op program) has been employed successfully at Marquette since 1919.

At Marquette, all students spend the first two years in the conventional academic program. Those not electing to participate in the Co-op Program continue through their last two years on the same conventional program. Admission to the Co-op Program is conditioned by (1) the applicant's academic standing; (2) his/her general employability, possibly including United States citizenship; and (3) the number of openings made available by industry. It should therefore be regarded as a privilege to be sought after, one usually gained only by those best qualified.

Early in the sophomore year, students attend an engineering orientation class, GEEN 2952, to learn about the Co-op Program's policies and procedures and the placement process. They

then apply to the Co-op Program and pursue co-op placement by submitting resumes and interviewing with prospective employers. Students who are hired by co-op employers begin working during the summer or fall following completion of their sophomore year, or soon thereafter. The students participating in the Co-op Program are divided into three groups which alternate between school and work on a planned basis. Typically, more than 230 students are in the Co-op Program at any given time and they are employed with more than 100 cooperating employers located in the Midwest and throughout the country.

NORMAL CO-OP SCHEDULE

| 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 under the company's direct supervision. The student is subject to the rules of the company which may include background checks and/or drug screening. Wages are paid directly to the student. The university does not employ the student but cooperates with industry in arranging such employment. The Co-op Program provides one credit hour for each work period successfully completed. The Co-op student is required to follow an especially arranged *Schedule of Classes* while in school so as to accommodate his/her alternating status (in school, at work, etc.) and assure that sequential courses are scheduled in proper order. This includes summer sessions as noted on the Normal Co-op Schedule. Registration for each work period is required of *all* Co-ops, and credit is established and graded through enrollment in the appropriate Co-op Grading Period during the following school period. Three credit hours earned via Co-op work experience may be applied to Bachelor of Science degree requirements as a substitute for one technical elective course.

ENGINEERING ETHICS AND VALUES (ENEV)

The goal of this program is to involve engineering students in an elective program which will help them to: (a) understand the impact of Christian, Catholic and Jesuit values on engineering ethics, (b) recognize current engineering ethical issues and (c) strengthen their moral resolve to act courageously on these issues once they enter the engineering profession.

The minor in engineering ethics and values requires 22 credit hours. Requirements include: PHIL 1001, PHIL 2310, and THEO 1001. Students are also required to participate in four 1-credit ENEV colloquia (ENEV 1952, 2952, 3952, 4952). Final course requirements include: 3 credit hours from the following list of courses: BIEN 4931 (selected sections only), CEEN 3770, 4740 and 6 additional credit hours from PHIL 3350, 3740, 4320, 4330, 4335, SOCI 3520, 5400, SOJW 1001, THEO 2400, 4430, 4440, 4450, MANA 3002, BIEN 4931 (selected sections only), CEEN 3720, 4740.

For more information, see the associate dean for academic affairs or www.marquette.edu/engineering/pages/AllYouNeed/enethicsvaluesminor.html.

PART-TIME STUDIES

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 Office of International Education Study Abroad Resource Center is located in the Alumni Memorial Union, 425. For additional information, see www.marquette.edu/abroad.

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.

ENGINEERING DEGREE WITH TEACHING CERTIFICATE

The national demand for teachers of science, technology, and math (STEM) continues to grow. This Marquette University Engineering / Education initiative will prepare interested undergraduates to become licensed teachers who can help meet the STEM related needs of our increasingly global society through the effective education of middle and high school students.

The goal of this program is to formalize a unique educational opportunity for students to pursue a traditional engineering degree and also become certified to teach. This program may be customized for any of the engineering majors.

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, Engineers Without Borders, the Society of Hispanic Professional Engineers, the Society of Women Engineers, the Institute of Transportation Engineers, American Society for Quality Control, the Biomedical Engineering Society, the Solar Energy Society, and the Society of Manufacturing Engineers.

PROFESSIONAL FRATERNITIES/SORORITIES

Students in the College of Engineering are eligible to join the following professional fraternities on campus: Sigma Phi Delta, international professional engineering fraternity; Triangle, national fraternity for engineers, architects, and scientists; Alpha Omega Epsilon, professional engineering sorority; and Engineering Knights of St. Patrick.

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 Department of Biomedical Engineering is a dedicated team committed to the Jesuit tradition of the pursuit of truth. We develop leaders and problem solvers skilled at applying engineering, science and design principles to improve health in the service of humanity by:

- Discovering and disseminating new knowledge;
- Providing excellent undergraduate and graduate education;
- Promoting critical thinking and lifelong learning;
- Guiding students to meaningful and ethical professional and personal lives;
- Fostering interdisciplinary and collaborative research and education through academic and industrial alliances;
- Continuing innovative leadership in education, research and industrial relationships; and
- Inspiring faculty and students to serve others.

Studies in biomedical engineering incorporate courses in biology, chemistry, mathematics, computing and engineering. These courses, in combination, emphasize the interdisciplinary elements of biomedical engineering not presently offered in the more traditional departments of engineering. A solid foundation in the mathematical, physical, and life sciences is necessary for the engineer to function effectively in a medically or biologically oriented problem solving environment. In this environment, the engineer needs to be able to communicate with physicians, to describe and model complex biological systems, to collect and analyze experimental or clinical data, to understand the capabilities and limitations of sophisticated instrumentation, and to understand the principles of design.

There are three majors in the biomedical engineering curriculum: biocomputing, bioelectronics and biomechanics. The bioelectronics major includes rigorous training in electrical engineering within the interdisciplinary framework of the curriculum. Such training, which includes courses in electric circuits and analog and digital electronics, supports interests focused on the measurement of bioelectric signals and biomedical instrumentation design. In the senior year, the culmination of the training features intensive biomedical instrument design and computer laboratories emphasizing modern bioelectric applications. In addition, a senior year capstone design course sequence places the student in a multidisciplinary design team situation to solve an actual industrial bioelectronic design problem.

The biomechanics major includes rigorous training in mechanical engineering within the interdisciplinary framework of the curriculum. Such training, which includes courses in materials and solid mechanics, supports interests focused on the application of biomechanics and biomaterials. In the senior year, the culmination of the training features intensive biomedical instrument design and computer laboratories emphasizing modern biomechanical applications. In addition, a senior-year capstone design course sequence places the student in a multidisciplinary design team situation to solve an actual industrial biomechanical or biomaterial design problem.

The biocomputer engineering curriculum integrates computer engineering and the life sciences, with a solid foundation in mathematics, physics, chemistry and engineering methods. The new curriculum combines foundational computer engineering knowledge with biocomputer engineering applications, integrating biology, physiology, medicine, biomedical software design, biosignal processing, bioinstrumentation. In the senior year, the training culminates with a comprehensive, biocomputer engineering, design laboratory experience that incorporates engineers from industry and emphasizes medical device design and methods for biomedical informatics. In addition, a senior capstone design course places students in a multidisciplinary team working with industry to solve biocomputer design problems.

All majors in biomedical engineering have been designed to be compatible with other programs offered by the College of Engineering. Each major fulfills the requirements of the University Core of Common Studies. The biomechanical and bioelectronics majors require 134 credits for graduation. The biocomputing major requires 135 credits for graduation. Students can earn an optional minor in either electrical or mechanical engineering as well as biology, chemistry, business administration, 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 INTERNSHIPS

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. Currently more than 70 percent of the biomedical engineering students participate in co-op or internship opportunities.

Marquette University began its Engineering Co-op Program in 1919. Students usually enter the Co-op program at the end of their sophomore year and complete three to four terms of off-campus employment. The employment experience is alternated with terms of on-campus study, only extending graduation by one year. The College of Engineering is a member of the American Society for Engineering Education and all of its biomedical, civil, computer, electrical and mechanical undergraduate degree programs are accredited by the Engineering Accreditation Commission of the Accreditation Board of ABET; 111 Market Place, Suite 1050, Baltimore, MD 21202-4012; telephone: (410) 347-7700. The Construction Engineering and Management program is eligible for accreditation review after its first class graduated. In addition to the formal Co-op program, undergraduates may also gain experience through summer internships.

FIVE YEAR B.S./M.S. PROGRAM

This program allows students to receive a bachelor of science degree and a master of science degree in biomedical engineering in five years. Students with grade point averages (3.500 or above) apply to the program during their junior year. They begin their thesis research the summer between their junior and senior years. Their research laboratory experience continues the summer between their senior and fifth years and throughout their fifth year, culminating in the preparation of a written thesis and defense.

EDUCATIONAL OBJECTIVES

To provide an educational program that will prepare graduates to:

- Participate as a technical contributor and member of a design and/or development team.
- Communicate effectively with individuals and teams with a wide variety of backgrounds.
- Pursue professional or graduate degrees or employment in the biomedical industry.
- Understand the legal, ethical, economic and regulatory requirements of medical device design and biomedical engineering research.
- Define, solve and implement solutions to a problem.
- Progress in developing leadership skills.
- Identify limitations in their own knowledge base and skills and engage in life long learning.

BIOCOMPUTING MAJOR

| <i>Freshman</i> | | | |
|------------------------------|------------------------|------------------------------|------------------------|
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| BIEN 1100 | 2 | BIEN 1110 | 2 |
| BIOL 1001 ^b | 3 | BIOL 1002 | 3 |
| MATH 1450 ^{2, b} | 4 | MATH 1455 | 4 |
| PHYS 1003 ^b | 4 | PHYS 1004 ^b | 4 |
| Core Rhetoric 1 ^f | 3 | EECE 1610 | 3 |
| | 16 | | 16 |
| <i>Sophomore</i> | | | |
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| EECE 2710 | 3 | COEN 2610 | 3 |
| MATH 2455 | 3 | Core Rhetoric 2 ^f | 3 |
| GEEN 2952 | 0 | BIEN 2300 | 4 |
| CHEM 1001 ^b | 4 | BIOL 2001 | 3 |
| BIEN 1120 | 2 | CHEM 1002 ^b | 4 |
| BIEN 2100 | 1 | | |
| Core elective ^c | 3 | | |
| | 16 | | 17 |
| <i>Junior</i> | | | |
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| EECE 2030 | 4 | BIEN elective ¹ | 3 |
| BIEN 3300 | 3 | COEN 4710 | 3 |
| BIEN 4700 | 3 | COEN 4820 | 3 |
| BIEN elective ¹ | 3 | BIEN 4220 | 3 |
| COSC 2010 | 3 | BIEN 3200 | 3 |
| | | Core elective ^c | 3 |
| | 16 | | 18 |
| <i>Senior</i> | | | |
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| BIEN 4920 | 3 | BIEN 4998 | 3 |
| BIEN 3310 | 3 | BIEN 4320 | 3 |
| BIEN 4280 | 3 | BIEN 4290 | 3 |
| Core elective ^c | 3 | BIEN elective ¹ | 3 |
| PHIL 1001 ^b | 3 | PHIL 2310 ^b | 3 |
| THEO 1001 ^b | 3 | THEO elective ^e | 3 |
| | 18 | | 18 |
| Total Credit Hours: | | | 135 |

^a For footnotes b, c, d, e, f refer to the College of Engineering section of this bulletin for details related to these footnotes.

1. Biomedical Engineering Electives — The following is a list of electives typically taken by biomedical engineering students.

This list is not inclusive. Other possible electives include upper division courses in MATH, BIOL, PHYS, CHEM, EECE, MEEN, COEN and related subject areas. These courses can be taken if approved by the adviser, department chair and associate dean through a course substitution form. Medical school bound students are strongly encouraged to take CHEM 2111, CHEM 2112 and BIOL 4101 as electives. BIEN 4931, BIEN 4710, BIEN 4410, BIEN 4230, BIEN 4600, BIEN 4610, BIEN 4630, BIEN 4420, BIEN 4500, BIEN 4720, BIEN 4510, BIEN 4995 (GPA>3.0), EECE 3110, EECE 3120, EECE 3025 (2 cr.), EECE 3035 (2cr.), EECE 4620, CEEN 2130, MEEN 3310, MEEN 3330, MEEN 3250, MEEN 4240, MEEN 4420, COEN 2710, COEN 4810, COEN 4650, BIOL 4101, BIOL 3702, CHEM 2111, CHEM 2112, MATH 2450, or MATH 4630.

2. Students who place out of MATH 1450 through advanced placement are encouraged to take MATH 1451 and MATH 2450 in place of MATH 1450 and MATH 1455.

Note: The three Core electives^c specified in this program assume that one of these Core electives is a Dual Application core course.

If a Dual Application Core elective is not taken, an additional Core elective is required and the total credit hours increases to 138.

BIOELECTRONICS MAJOR

Freshman

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|------------------------------|------------------------|------------------------------|------------------------|
| BIEN 1100 | 2 | BIEN 1110 | 2 |
| BIOL 1001 ^b | 3 | BIOL 1002 | 3 |
| MATH 1450 ^{2, b} | 4 | MATH 1455 | 4 |
| PHYS 1003b | 4 | PHYS 1004 ^b | 4 |
| Core Rhetoric 1 ^f | 3 | Core Rhetoric 2 ^f | 3 |
| | 16 | | 16 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|----------------------------|------------------------|----------------------------|------------------------|
| EECE 2010 | 3 | EECE 3010 | 3 |
| EECE 2015 | 1 | ELEN 2020 | 3 |
| BIEN 1120 | 2 | EECE 2035 | 1 |
| MATH 2455 | 3 | BIEN 2100 | 1 |
| GEEN 2952 | 0 | BIOL 2001 | 3 |
| CHEM 1001 ^b | 4 | CHEM 1002 ^b | 4 |
| Core elective ^c | 3 | Core elective ^c | 3 |
| | 16 | | 18 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|----------------------------|------------------------|----------------------------|------------------------|
| EECE 2030 | 4 | ELEN 3030 | 4 |
| CEEN 2122 | 4 | BIEN 3310 | 3 |
| BIEN 3300 | 3 | BIEN 3200 | 3 |
| BIEN 4700 | 3 | BIEN elective ¹ | 3 |
| BIEN elective ¹ | 3 | THEO 1001 ^b | 3 |
| | 17 | | 16 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|----------------------------|------------------------|----------------------------|------------------------|
| BIEN 4920 | 3 | BIEN 4998 | 3 |
| BIEN 4320 | 3 | BIEN 4400 | 3 |
| BIEN 4380 | 3 | BIEN 4390 | 3 |
| BIEN elective ¹ | 3 | EECE 3015 | 2 |
| THEO elective ^c | 3 | PHIL 2310 ^b | 3 |
| PHIL 1001 ^b | 3 | Core elective ^c | 3 |
| | 18 | | 17 |

Total Credit Hours: 134

a For footnotes b, c, d, e, f refer to the College of Engineering section of this bulletin for details related to these footnotes.

1. Biomedical Engineering Electives — The following is a list of electives typically taken by biomedical engineering students. This list is not inclusive. Other possible electives include upper division courses in MATH, BIOL, PHYS, CHEM, EECE, MEEN, COEN and related subject areas. These courses can be taken if approved by the adviser, department chair and associate dean through a course substitution form. Medical school bound students are strongly encouraged to take CHEM 2111, CHEM 2112 and BIOL 4101 as electives. BIEN 4931, BIEN 4710, BIEN 4410, BIEN 4230, BIEN 4600, BIEN 4610, BIEN 4630, BIEN 4420, BIEN 4500, BIEN 4720, BIEN 4510, BIEN 4995 (GPA>3.0), EECE 3110, EECE 3120, EECE 3025 (2 cr.), EECE 3035 (2cr.), EECE 4620, CEEN 2130, MEEN 3310, MEEN 3330, MEEN 3250, MEEN 4240, MEEN 4420, COEN 2710, COEN 4810, COEN 4650, BIOL 4101, BIOL 3702, CHEM 2111, CHEM 2112, MATH 2450, or MATH 4630.

2. Students who place out of MATH 1450 through advanced placement are encouraged to take MATH 1451 and MATH 2450 in place of MATH 1450 and MATH 1455.

Note: The three Core electives^c specified in this program assume that one of these Core electives is a Dual Application core course. If a Dual Application Core elective is not taken, an additional Core elective is required and the total credit hours increases to 137.

BIOMECHANICS MAJOR

Freshman

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|------------------------------|------------------------|------------------------------|------------------------|
| BIEN 1100 | 2 | BIEN 1110 | 2 |
| BIOL 1001 ^b | 3 | BIOL 1002 | 3 |
| MATH 1450 ^{2, b} | 4 | MATH 1455 | 4 |
| PHYS 1003 ^b | 4 | PHYS 1004 ^b | 4 |
| Core Rhetoric 1 ^f | 3 | Core Rhetoric 2 ^f | 3 |
| | 16 | | 16 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|------------------------|------------------------|----------------------------|------------------------|
| BIOL 2001 | 3 | MEEN 2460 | 3 |
| CHEM 1001 ^b | 4 | CHEM 1002 ^b | 4 |
| CEEN 2110 | 3 | MEEN 2120 | 3 |
| MATH 2455 | 3 | BIEN 2100 | 1 |
| GEEN 2952 | 0 | BIEN 2300 | 4 |
| BIEN 1120 | 2 | Core elective ^c | 3 |
| | 15 | | 18 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|----------------------------|------------------------|----------------------------|------------------------|
| BIEN 3300 | 3 | BIEN 3310 | 3 |
| CEEN 2130 | 3 | BIEN 4700 | 3 |
| MEEN 3310 | 3 | BIEN 3200 | 3 |
| MEEN elective ³ | 3 | BIEN elective ¹ | 3 |
| THEO 1001 ^b | 3 | PHIL 1001 ^b | 3 |
| Core elective ^c | 3 | Core elective ^c | 3 |
| | 18 | | 18 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|----------------------------|------------------------|----------------------------|------------------------|
| BIEN 4920 | 3 | BIEN 4998 | 3 |
| BIEN 4320 | 3 | BIEN 4400 | 3 |
| BIEN 4480 | 3 | BIEN 4490 | 3 |
| BIEN elective ¹ | 3 | BIEN elective ¹ | 3 |
| MEEN elective ³ | 3 | THEO elective ^c | 3 |
| | 15 | PHIL 2310 ^b | 3 |
| | | | 18 |

Total Credit Hours: 134

a For footnotes b, c, d, e, f refer to the College of Engineering section of this bulletin for details related to these footnotes.

1. Biomedical Engineering Electives — The following is a list of electives typically taken by biomedical engineering students.

This list is not inclusive. Other possible electives include upper division courses in MATH, BIOL, PHYS, CHEM, EECE, MEEN, COEN and related subject areas. These courses can be taken if approved by the adviser, department chair and associate dean through a course substitution form. Medical school bound students are strongly encouraged to take CHEM 2111, CHEM 2112 and BIOL 4101 as electives. BIEN 4931, BIEN 4710, BIEN 4410, BIEN 4230, BIEN 4600, BIEN 4610, BIEN 4630, BIEN 4420, BIEN 4500, BIEN 4720, BIEN 4510, BIEN 4995 (GPA>3.0), EECE 3110, EECE 3120, EECE 3025 (2 cr.), EECE 3035 (2 cr.), EECE 4620, MEEN 3330, MEEN 3250, MEEN 4240, MEEN 4420, COEN 2710, COEN 4810, COEN 4650, BIOL 4101, BIOL 3702, CHEM 2111, CHEM 2112, MATH 2450, or MATH 4630.

2. Students who place out of MATH 1450 through advanced placement are encouraged to take MATH 1451 and MATH 2450 in place of MATH 1450 and MATH 1455.

3. MEEN Electives — Students may choose two of three Mechanical Engineering courses. MEEN 3220, Dynamics of Mechanical Systems; MEEN 3260, Computer Aided Design; of MEEN 3460, Materials Selection in Mechanical Design. Note: MEEN 3220 is a Prerequisite for MEEN 3260. If not used as a MEEN elective, any of these courses can be used a BIEN elective.

Note: The three Core electives^c specified in this program assume that one of these Core electives is a Dual Application core course. If a Dual Application Core elective is not taken, an additional Core elective is required and the total credit hours increases to 137.

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 2300, 3300, 4700, 3200, 4320; BIOL 1001; CHEM 2111; (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 or a bachelor of science degree in construction engineering and management.

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.

PROGRAM EDUCATIONAL OBJECTIVES

To carry out the mission of the College of Engineering and the mission of the department described previously, the Department of Civil and Environmental Engineering has established the following Educational Objectives for its undergraduate programs.

- Develop an appreciation for religious, moral, ethical and human values.
- Provide a foundation for the application of the fundamentals of science and mathematics to engineering analysis and design.
- Provide a foundation for understanding the application of civil engineering by giving students an opportunity to experience the civil engineering profession through the cooperative engineering program, service learning, summer internships and/or hands-on experience in laboratory courses.
- Prepare graduates to communicate effectively in written, graphical and oral form.
- Prepare students to be leaders by providing opportunities to exhibit leadership and develop team-building skills.
- Instill a commitment to lifelong learning.

Civil engineering is the art and science used in the construction of facilities which people need in their environment — land, water and air. Airports, buildings, bridges, dams, harbors, highways, irrigation systems, transportation systems, sewerage and water supply systems are examples of the types of facilities which are the responsibility of the civil engineer.

Since the beginning of civilization, people have been building with the use of engineering principles. Modern society depends on this contribution from the civil engineer, whose education is systematically developed from a strong background in mathematics, 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 MANAGEMENT

Construction projects of all types require management as well as the traditional engineering skills. This program is arranged so that a student may vary the usual undergraduate program to obtain the knowledge needed to enter a graduate program in construction management while still maintaining the essentials of a general civil engineering program.

Those students who want to focus more on construction engineering and management may be interested in pursuing a bachelor of science degree in construction engineering and management which is also offered by the department.

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).

CIVIL ENGINEERING MAJOR

| <i>Freshman</i> | | | |
|--|------------------------|--|------------------------|
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| MATH 1450 ^b | 4 | MATH 1451 ^b | 4 |
| CHEM 1001 ^b | 4 | CHEM 1002 ^b | 4 |
| Core Rhetoric 1 ^f | 3 | Core Rhetoric 2 ^f | 3 |
| Core elective ^c | 3 | Core elective ^c | 3 |
| GEEN 1200 | 3 | GEEN 1210 | 3 |
| | 17 | | 17 |
| <i>Sophomore</i> | | | |
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| MATH 2450 | 4 | MATH 2451 | 4 |
| PHYS 1003 ^b | 4 | PHYS 1004 ^b | 4 |
| GEEN 2952 | 0 | CEEN 2120 | 3 |
| CEEN 2110 | 3 | MEEN 2402 | 2 |
| CEEN 2310 | 3 | Core elective ^c /Free elective ^d | 3 |
| Core elective ^c | 3 | | |
| | 17 | | 16 |
| <i>Junior</i> | | | |
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| CEEN 2130 | 3 | CEEN 3210 | 3 |
| CEEN 3150 | 3 | CEEN 3320 | 3 |
| CEEN 3160 | 3 | CEEN 3410 | 3 |
| CEEN 3510 | 3 | CEEN 3610 | 3 |
| Cross-disciplinary Engineering elective ¹ | 3 | CEMA 3810 | 3 |
| PHIL 1001 ^b | 3 | | |
| | 18 | | 15 |
| <i>Senior</i> | | | |
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| CEEN 3430 | 3 | CEEN 4997 | 4 |
| CEEN 3440 | 3 | CEEN Technical elective | 3 |
| CEEN 4710 | 1 | CEEN Technical elective (Design) | 3 |
| THEO 1001 ^b | 3 | PHIL 2310 ^b | 3 |
| CEEN Technical elective | 3 | Theology elective ^c | 3 |
| CEEN Technical elective (Design) | 3 | | |
| | 16 | | 16 |

Total Credit Hours: 132

a For footnotes b, c, d, e, f refer to the College of Engineering section of this bulletin for details related to these footnotes.

1 Either ELEN 3001 or MEEN 3310

TECHNICAL ELECTIVE REQUIREMENTS

All civil engineering majors must complete 12 credits of technical electives from the courses listed below. A minimum of 6 credits of civil engineering design is required and must be selected from those courses designated as design (D).

| | | |
|---------------|---------------|---------------|
| CEEN 3220 (D) | CEEN 4320 | CEEN 4540 |
| CEEN 3615 (D) | CEEN 4340 (D) | CEEN 4545 |
| CEEN 3620 (D) | CEEN 4350 | CEEN 4650 (D) |
| CEEN 3625 (D) | CEEN 4411 | CEEN 4660 |
| CEEN 3630 (D) | CEEN 4431 (D) | CEEN 4670 |
| CEEN 3640 (D) | CEEN 4441 (D) | CEEN 4715 (D) |
| CEEN 3645 | CEEN 4442 (D) | CEEN 4815 |
| CEEN 4145 | CEEN 4450 (D) | CEEN 4820 |
| CEEN 4230 (D) | CEEN 4460 (D) | CEEN 4825 |
| CEEN 4240 (D) | CEEN 4515 | CEEN 4830 |
| CEEN 4250 | CEEN 4520 (D) | CEEN 4840 |
| CEEN 4310 | CEEN 4525 (D) | CEEN 4850 |
| | CEEN 4530 | |

(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 | | | Offered | Design | Environmental Option | Structural Option | Transportation Option | Construction Management Option |
|---------|------|---|---------|--------|----------------------|-------------------|-----------------------|--------------------------------|
| CEEN | 3220 | River Engineering | F | | | HR | | R |
| CEEN | 3615 | Highway Planning and Design | S | X | | HR | | |
| CEEN | 3620 | Highway Interchange Design | S | X | HR | | | |
| CEEN | 3625 | Urban Street Design | F | X | HR | | R | R |
| CEEN | 3630 | Airport Planning and Design | O | | R | | R | |
| CEEN | 3640 | Traffic Characteristics and Design | S | X | R | | R | |
| CEEN | 3645 | Traffic Engineering | O | | R | | | |
| CEEN | 4145 | Advanced Mechanics of Materials | S | | R | | R | |
| CEEN | 4230 | Urban Hydrology and Storm Water Management | F | | | R | | |
| CEEN | 4240 | Water Resources Engineering | S | X | | HR | | R |
| CEEN | 4250 | Groundwater Engineering | S | X | | HR | | R |
| CEEN | 4310 | Geographical Information Systems | S | X | | HR | R | |
| CEEN | 4320 | Engineering Decisions Under Uncertainty | S | X | R | R | R | R |
| CEEN | 4340 | Urban Planning For Civil Engineers | F | | HR | | | |
| CEEN | 4350 | Law for Engineers | S | X | R | | | |
| CEEN | 4411 | Matrix Analysis | F | X | HR | | | |
| CEEN | 4431 | Steel Design 2 | S | | R | | | |
| CEEN | 4441 | Advanced Concrete and Masonry Design | S | | R | | | |
| CEEN | 4442 | Prestressed Concrete Design | S | | R | | | |
| CEEN | 4450 | Bridge Design | S | X | | R | | HR |
| CEEN | 4460 | Foundation Engineering | F | X | | | HR | |
| CEEN | 4515 | Environmental Chemistry | S | X | | | HR | |
| CEEN | 4520 | Industrial Wastewater Management | F | X | | | HR | |
| CEEN | 4525 | Treatment Plant Design and Operation | S | X | | | R | |
| CEEN | 4530 | Hazardous and Industrial Waste Management | F | | | | HR | R |
| CEEN | 4535 | Environmental Engineering Microbiology | F | X | | | HR | |
| CEEN | 4540 | Municipal Solid Waste Management | S | | | | HR | R |
| CEEN | 4545 | Air Pollution Engineering | S | X | | | HR | |
| CEEN | 4650 | Pavement Design | F | | | | HR | |
| CEEN | 4660 | Pavement Management | S | | | R | | HR |
| CEEN | 4670 | Advanced Transportation Materials | S | X | R | | HR | R |
| CEEN | 4715 | Sustainable Engineering | F | | R | R | R | R |
| CEMA | 3850 | Construction Equipment and Methods | F | X | | | | HR |
| CEMA | 4815 | Mechanical and Electrical Systems | S | | | | | HR |
| CEMA | 4820 | Construction Operations and Improvement | O | | | | | HR |
| CEMA | 4825 | E-Business in the Construction Business | O | | | | | HR |
| CEMA | 4830 | Construction Planning, Scheduling and Control | F | | | | | HR |
| CEMA | 4840 | Construction Cost Analysis and Estimating | S | | R | R | R | HR |

R = Recommended; HR = Highly Recommended

F = Fall, S = Spring, O = Occasionally

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.

| | | <i>Junior</i> | |
|--|------------------------|---------------|------------------------|
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| CEEN 2130 | 3 | CEEN 3210 | 3 |
| CEEN 3150 | 3 | CEEN 3320 | 3 |
| CEEN 3160 | 3 | CEEN 3410 | 3 |
| CEEN 3510 | 3 | CEEN 3610 | 3 |
| Biological Science Elective ² | 3 | CEMA 3810 | 3 |
| MEEN 3310 | 3 | | |
| | 18 | | 15 |

| | | <i>Senior</i> | |
|---|------------------------|---|------------------------|
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| CEEN 4515 | 3 | CEEN 4997 | 4 |
| CEEN 4710 | 1 | Environmental technical elective | 3 |
| CEEN 4953 ² | 0 | Environmental technical elective (Design) | 3 |
| Structural Design elective ³ | 3 | PHIL 2310 ^b | 3 |
| Environmental technical elective (Design) | 3 | Theology elective ^e | 3 |
| PHIL 1001b | 3 | | |
| THEO 1001 ^b | 3 | | |
| | 16 | | 16 |

Total Credit Hours: 132

a For footnotes b, c, d, e, f refer to the College of Engineering section of this bulletin for details related to these footnotes.

1 Participation in CEEN 4953, Environmental Seminar, is required during either the first or second term of the senior year.

2 Either BIOL 1001, BIOL 2401 or CEEN 4535

3 Either CEEN 3430 or CEEN 3440

ENVIRONMENTAL ELECTIVES

Nine credits are required from the following list. Six credits must be selected from those designated as design (D).

| | | |
|---------------|---------------|---------------|
| CEEN 3220 (D) | CEEN 4230 (D) | CEEN 4240 (D) |
| CEEN 4250 | CEEN 4310 | CEEN 4340 |
| CEEN 4520 (D) | CEEN 4525 (D) | CEEN 4530 |
| CEEN 4535 | CEEN 4540 | CEEN 4545 |
| CEEN 4715 (D) | | |

CONSTRUCTION ENGINEERING AND MANAGEMENT MAJOR

In addition to the Civil Engineering and Environmental majors described above, students may elect to specialize in construction engineering and obtain a bachelor of science degree in that discipline.

Freshman

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|------------------------------------|------------------------|------------------------------------|------------------------|
| CHEM 1001 ^b | 4 | CHEM 1002 ^b | 4 |
| Core Rhetoric 1 ^f | 3 | Core Rhetoric 2 ^f | 3 |
| GEEN 1200 | 3 | GEEN 1210 | 3 |
| MATH 1450 ^b | 4 | MATH 1451 ^b | 4 |
| Core elective ^{c,1} | 3 | ECON 1001 ^{b,1} | 3 |
| | 17 | | 17 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|------------------------------|------------------------|------------------------------------|------------------------|
| PHYS 1003 ^b | 4 | PHYS 1004 ^b | 4 |
| MATH 2450 | 4 | MATH 2451 | 4 |
| GEEN 2952 | 0 | ACCO 2031 | 3 |
| CEEN 2110 | 3 | Core elective ^{c,1} | 3 |
| CEEN 2310 | 3 | CEMA 3810 | 3 |
| ACCO 2030 | 3 | | |
| | 17 | | 17 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|------------------------------|------------------------|-----------------|------------------------|
| CEEN 2130 | 3 | CEEN 3320 | 3 |
| CEEN 3160 | 3 | CEEN 3410 | 3 |
| CEMA 3860 | 3 | CEEN 4350 | 3 |
| MATH 4720 | 3 | CEMA 4815 | 3 |
| FINA 3001 | 3 | HURE 3001 | 3 |
| PHIL 1001 ^b | 3 | CMST 1300 | 2 |
| | 18 | | 17 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|---|------------------------|
| CEMA 3850 | 3 | CEEN 4997 | 4 |
| CEMA 4830 | 3 | CEMA 4840 | 3 |
| PHIL 2310 ^b | 3 | CORE elective ^{c,1} | 3 |
| CEEN technical elective ² | 3 | CEEN technical elective (design) ² | 3 |
| THEO 1001 ^b | 3 | THEO elective ^e | 3 |
| | 15 | | 16 |

Total Credit Hours: 134

1 As ECON 1001 which meets the Core Individual and Social Behavior knowledge area, remaining Core electives should be taken so as to address History of Cultures and Societies, Literature and Performing Arts, and Diverse Cultures.

2 Note that co-op is required for the CEMA program. One academic credit is awarded for each co-op work term completed, three of which can be used as a technical elective towards degree requirements.

TECHNICAL ELECTIVES:

| | | | |
|---------------|---------------|---------------|---------------|
| CEEN 3430 (D) | CEEN 3440 (D) | CEEN 3510 | CEEN 3610 |
| CEEN 4230 (D) | CEEN 4460 (D) | CEEN 4650 (D) | CEEN 4715 (D) |
| CEEN 4820 | CEEN 4825 | | |

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 CEEN 2122, (or CEEN 2110 and 2120), 2130, 3150 and at least 12 additional hours, from the following CEEN courses: CEEN 2310, 3160, 3410, 3510, 3610, or CEMA 3810, 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 CEEN 2122, (or CEEN 2110 and 2120), 3150, BIOL 1001 or CHEM 2111, CEEN 3510 and at least nine additional hours from the following courses: CEEN 3210, 3220, 4230, 4240, 4250, 4515, 4520, 4525, 4530, 4535 and 4540. 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 Marquette University (with a GPA of 3.500 or above) may apply for admission to the five-year program during their junior year. Students must submit an application to the Graduate School, indicate their interest in the five-year program, and meet all other admission criteria as stated in the Application Requirements section of the *Graduate Bulletin*.

In addition to completing their undergraduate degree requirements, students will take master's level courses during their senior year. (*Note that no course is permitted to satisfy both the undergraduate and graduate degree requirements in the Five-year B.S./M.S. Program of the Department of Civil and Environmental Engineering.*) The remaining master's level course work is taken during the student's fifth year. Students are strongly encouraged to pursue Plan A (thesis option), in which case work on the thesis research should begin during the summer between the junior and senior years. Students will continue to gain research experience during the summer between senior and fifth years, continuing throughout the fifth year and culminating in preparation of a written thesis and defense. Combined B.S./M.S. programs following Plan B (course work option) may also be designed for completion in five years. See the *Graduate Bulletin* for further details.

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

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 AND COMPUTER ENGINEERING PROGRAM EDUCATIONAL OBJECTIVES

The Educational Objectives for the Electrical Engineering and Computer Engineering Programs derive from the Department's vision for our graduates. Alumni of these programs, particularly those individuals who have completed their undergraduate education within the last two to five years, will be thriving professionals who apply the knowledge, skills, and values gained through their study of Computer or Electrical Engineering at Marquette University.

Specifically, our graduates are:

1. Engaged in solving significant problems in engineering or another field, as employees in the public or private sector, or as students pursuing an advanced or professional degree, or as volunteers.
2. Capably contributing as members of engineering or other problem-solving teams and communicating effectively both within the team and to the team's clients.
3. Advancing in their professional careers — taking on increasing responsibilities as well as leadership roles.
4. Continually learning, whether in a formal degree program or by participating in professional conferences and continuing education programs.
5. Acting responsibly when making professional and personal decisions — serving as examples to those around them.

Electrical Engineering

Two curricula offered in the Department of Electrical and Computer Engineering lead to the bachelor of science degree in electrical engineering.

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. |
|----------------------------------|------------------------|------------------------------------|------------------------|
| CHEM 1001 ^b | 4 | EECE 1610 | 3 |
| ENGL 1001 ^f | 3 | ELEN 1953 | 0 |
| GEEN 1200 | 3 | Core Rhetoric 2 ^f | 3 |
| MATH 1450 ^b | 4 | GEEN 1210 | 3 |
| Core elective ^c | 3 | MATH 1451 ^b | 4 |
| | | Core elective ^c | 3 |
| | 17 | | 16 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|------------------------------|------------------------|------------------------------|------------------------|
| EECE 2010 ¹ | 3 | EECE 2035 | 1 |
| EECE 2015 ¹ | 1 | EECE 3010 ¹ | 3 |
| EECE 2710 | 3 | ELEN 2020 ¹ | 3 |
| GEEN 2952 | 0 | MATH 2451 | 4 |
| MATH 2450 | 4 | PHYS 1004 ^b | 4 |
| PHIL 1001 ^b | 3 | THEO 1001 ^b | 3 |
| PHYS 1003 ^b | 4 | | |
| | 18 | | 18 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|------------------------------|------------------------|------------------------------|------------------------|
| EECE 2030 ¹ | 4 | CEEN 2122 | 4 |
| ELEN 3020 | 4 | EECE 3015 | 2 |
| ELEN 3025 ¹ | 2 | ELEN 3030 ¹ | 4 |
| ELEN 3110 ¹ | 4 | ELEN 3120 | 3 |
| PHIL 2310 ^b | 3 | ELEN 3210 | 2 |
| | 17 | | 16 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|----------------------------------|------------------------|--|------------------------|
| ELEN 3035 | 2 | ELEN 4998 | 3 |
| ELEN 4430 | 3 | EECE Technical elective ³ | |
| ELEN 4920 | 3 | Science/Math elective | 3 |
| MATH 4720 | 3 | Core elective ^c | 3 |
| Design elective | 3 | Core elective ^c /Free elective ^d | 3 |
| THEO elective ^e | 3 | | |
| | 17 | | 15 |

Total Credit Hours: 134

a For footnotes b, c, d, e, f 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 an upper division elective in EECE, COEN, COSC, MATH, PHYS and/or CHEM. Other courses may be acceptable with prior approval of the department.

3 The science/math elective can be fulfilled with any upper division math or physics course or any biology or chemistry course for which the prerequisite requirements are met.

4 This elective must be chosen from ELEN (4130, 4210, 4220, 4230, 4240, 4250, 4310, 4320, 4450, 4460, 4565, 4570); EECE (4410, 4510); COEN (4650, 4710, 4830); and [ELEN (4015, 4995) and COEN (4690, 4790 and 4995) with department approval as a design elective].

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 Klingler College of Arts and Sciences by an appropriate selection of their program elective, technical elective, and science/math elective, and one overload course. If the core electives are chosen to satisfy footnote d, the resulting free elective will eliminate the need for an overload course.

Electrical and Computer Engineering Major

Freshman

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--------------------------------------|------------------------|--|------------------------|
| CHEM 1001 ^b | 4 | EECE 1610 | 3 |
| ENGL 1001 ^f | 3 | ELEN 1953 | 0 |
| GEEN 1200 | 3 | Core Rhetoric 2 ^f | 3 |
| MATH 1450 ^b | 4 | GEEN 1210 | 3 |
| Core elective ^c | 3 | MATH 1451 ^b | 4 |
| | | Core elective ^c | 3 |
| | 17 | | 16 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|----------------------------------|------------------------|----------------------------------|------------------------|
| EECE 2010 ¹ | 3 | EECE 2035 | 1 |
| EECE 2015 ¹ | 1 | EECE 3010 ¹ | 3 |
| EECE 2710 ¹ | 3 | ELEN 2020 ¹ | 3 |
| GEEN 2952 | 0 | MATH 2451 | 4 |
| MATH 2450 | 4 | PHYS 1004 ^b | 4 |
| PHIL 1001 ^b | 3 | THEO 1001 ^b | 3 |
| PHYS 1003 ^b | 4 | | |
| | 18 | | 18 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|----------------------------------|------------------------|----------------------------------|------------------------|
| EECE 2030 ¹ | 4 | CEEN 2122 ² | 4 |
| ELEN 3020 | 4 | COEN 4710 | 3 |
| ELEN 3025 ¹ | 2 | COSC 2010 | 3 |
| ELEN 3110 ¹ | 4 | EECE 3015 | 2 |
| PHIL 2310 ^b | 3 | ELEN 3030 ¹ | 4 |
| | 17 | | 16 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| ELEN 3035 | 2 | ELEN 4998 | 3 |
| ELEN 4920 | 3 | EECE program elective ³ | 3 |
| MATH 4720 | 3 | EECE technical elective ⁴ | 3 |
| Design elective ⁵ | 3 | Core elective ^c | 3 |
| Science/Math elective ⁶ | 3 | Core elective ^c /Free elective ^d | 3 |
| THEO elective ^c | 3 | | |
| | 17 | | 15 |

Total Credit Hours: 134

a For footnotes b, c, d, e, f 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 Students may also choose CHEM 1002 in place of CEEN 2122.

3. Program electives must be chosen from the following list: any design elective for the electrical and computer engineering major (footnote 5 below); COEN (4610, 4820); COSC (3410, 3550, 4110, 4400) and [ELEN (4015, 4995) and COEN (4690, 4790 and 4995) with departmental approval as a program elective].

4. These electives will normally be upper division electives in EECE, COEN, COSC, MATH, PHYS and/or CHEM. Other courses may be acceptable with prior approval of the department.

5. This elective must be chosen from the following courses with a computer design emphasis: ELEN (4310, 4320, 4450, 4460, 4570); EECE (4410, 4510); COEN(4620, 4630, 4650, 4720, 4730, 4810, 4830, 4840, 4850, 4860, 4870); and [ELEN (4015, 4995) and COEN (4690, 4790 and 4995) with departmental approval as a design elective].

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 1002 is selected instead of CEEN 2122 as described in footnote 2, this elective becomes an EECE/Technical elective (see footnote 4).

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.

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 4310†, EECE 4320†, ELEN 4450†, EECE 4510†, EECE 4560†.

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 4410†, ELEN 4450†

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: ELEN 4130†, ELEN 4450†, ELEN 4460†, ELEN 4560, ELEN 4565†, ELEN 4570†.

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: ELEN 4220†, ELEN 4460†, COEN 4710†, COEN 4720†.

POWER

Power engineering emphasizes the control and conversion of electrical energy. Motors and generators with their associated electronic power controls, power distribution systems and control systems are examined. Modern computer-aided analysis is brought to bear on the design and analysis of power devices and power systems.

Recommended courses in the power concentration area include: ELEN 4150†, ELEN 4210, ELEN 4220†, ELEN 4230†, ELEN 4240†, ELEN 4250†.

†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 4620, COEN 4630†, COEN 4650†, COEN 4690†, COEN 4810†, COEN 4820†, COEN 4830†, COEN 4840†, COEN 4850†, COEN 4860†, COEN 4870†.

COMPUTER HARDWARE

Recommended courses in the computer hardware area of concentration include: COEN 4720†, COEN 4730†, EECE 4410†, EECE 4510†.

†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 is possible for students completing the requirements for the bachelor's degree in electrical engineering to also earn a minor in mathematics by carefully choosing their elective program. For those students completing the requirements for the electrical and computer engineering major, alternatively, a minor in computer science may be possible.

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: (EECE 1610, EECE 2710, COSC 2010 and MATH 2105, plus three additional courses (nine credits) from the following list: (COSC 3100, 3300, 3410, 3550, 4110, 4400, 4610, 4860). Overload hours can be minimized in consultation with an academic adviser.

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 2010, EECE 2015, ELEN 2020, EECE 2030, EECE 2035, EECE 3010, ELEN 3020, ELEN 3025, ELEN 3030, and either (EECE 2710 or ELEN 3110) or (ELEN 3015 or ELEN 3035). 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.

FIVE YEAR B.S./M.S. PROGRAM

This program allows students to receive a bachelor of science degree in either electrical engineering or computer engineering, depending on the student's undergraduate major, and a master of science degree in electrical engineering in five years. Students with qualifying grade point averages enroll in the program during their junior year. Additional information about this program is available in the most recent Marquette University Graduate Bulletin.

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.

Computer Engineering

Freshman

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--------------------------------------|------------------------|--|------------------------|
| CHEM 1001 ^b | 4 | EECE 1610 | 3 |
| ENGL 1001 ^f | 3 | ELEN 1953 | 0 |
| GEEN 1200 | 3 | GEEN 1210 | 3 |
| MATH 1450 ^b | 4 | MATH 1451 ^b | 4 |
| Core elective ^c | 3 | Core elective ^c | 3 |
| | | Core Rhetoric 2 ^f | 3 |
| | 17 | | 16 |

Sophomore

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|----------------------------------|------------------------|----------------------------------|------------------------|
| COSC 2010 | 3 | COEN 2020 | 3 |
| EECE 2010 ¹ | 3 | COEN 2610 | 3 |
| EECE 2015 ¹ | 1 | EECE 2035 | 1 |
| EECE 2710 ¹ | 3 | EECE 3010 | 3 |
| GEEN 2952 | 0 | MATH 2451 | 4 |
| MATH 2450 | 4 | THEO 1001 ^b | 3 |
| PHIL 1001 ^b | 3 | | |
| | 17 | | 17 |

Junior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--------------------------------------|------------------------|--|------------------------|
| EECE 2030 ¹ | 4 | COEN 4710 | 3 |
| MATH 4720 | 3 | COEN 4820 | 3 |
| PHIL 2310 ^b | 3 | EECE 3015 | 2 |
| PHYS 1003 ^b | 4 | MATH 2105 | 3 |
| Core elective ^c | 3 | PHYS 1004 ^b | 4 |
| | | COEN technical elective ² | 3 |
| | 17 | | 18 |

Senior

| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
|--|------------------------|--|------------------------|
| COEN 4720 | 3 | COEN 4998 | 3 |
| COEN 4920 | 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 |
| COEN technical elective ² | 3 | Core elective ^e /Free elective ^d | 3 |
| THEO elective ^e | 3 | | |
| | 18 | | 15 |

Total Credit Hours: 135

a For footnotes b, c, d, e, f 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. At least five of the seven electives must be COEN design electives. The remaining two electives can be in any technical area.
3. Of the five COEN design electives, one must be in the Hardware area, one must be in the Software 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, Software, Intelligent Systems, and 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 area, a second COEN elective must be in the Software area, and a third COEN elective must be in either the Intelligent Systems area or the Applications area. To meet the depth requirement, a total of three COEN electives must be in one of the following four areas: Hardware, Software, Intelligent Systems, and Applications. These areas of concentration and the courses in each area are described below.

Hardware

Hardware includes the study of computer architectures, computer chip technology, peripheral devices, signal processing, interface design, and the like. The following COEN elective courses are available in the Hardware area:

- COEN 4730 Computer Architecture
- COEN 4790 Developments in Computer Hardware
- EECE 4410 Integrated Microelectronic Circuits
- EECE 4510 Digital Signal Processing

Software

Software 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 area:

- COEN 4610 Object-Oriented Software Engineering
- COEN 4620 Modern Programming Practices
- COEN 4630 Software Testing
- COEN 4690 Developments in Computer Software
- COEN 4840 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 ELEN 3020 as one of their non-COEN electives. The following COEN elective courses are available in the Intelligent Systems area:

- COEN 4650 Introduction to Algorithms
- COEN 4840 Computer Security
- COEN 4850 Introduction to Intelligent Systems
- COEN 4860 Introduction to Neural Networks and Fuzzy Systems
- COEN 4870 Evolutionary Computing
- EECE 4510 Digital Signal Processing

Applications

The Applications area includes the study of database systems, computer graphics, software testing, and computer security. The following COEN elective courses are available in the Applications area:

- COEN 4620 Modern Programming Practices
- COEN 4630 Software Testing
- COEN 4640 Computer Security
- COEN 4690 Development in Computer Software
- COEN 4810 Database Applications
- COEN 4830 Introduction to Computer Graphics

Graduate Study

The COEN curriculum provides an excellent foundation for students wishing to pursue graduate studies in most computer engineering, computer science, and electrical engineering graduate programs. However, students who wish to enter the Marquette University graduate program in Electrical Engineering must take ELEN 3020 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 of: EECE 1610, EECE 2710, COSC 2010 and MATH 2105, plus three additional courses (nine credits) from the following list: COSC 3100, 3300, 3410, 3550, 4110, 4400, 4610, and 4860. Overload hours can be eliminated or minimized in consultation with an academic adviser.

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 2010, EECE 2015, COEN 2020, EECE 2030, EECE 2035, COEN 2610, EECE 2710, EECE 3010, COEN 4710, COEN 4720, and COEN 4820. 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.

FIVE YEAR B.S./M.S. PROGRAM

This program allows students to receive a bachelor of science degree in either electrical engineering or computer engineering, depending on the student's undergraduate major, and a master of science degree in electrical engineering in five years. Students with qualifying grade point averages enroll in the program during their junior year. Additional information about this program is available in the most recent Marquette University Graduate Bulletin.

DEPARTMENT OF MECHANICAL ENGINEERING

The Department of Mechanical 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 Engineering to offer a high quality, up-to-date, nationally-recognized engineering program which prepares students for successful careers. This success is marked by the graduates' commitment to lifelong learning; a deep concern for the impact of their work on others; research that advances technical and scientific knowledge; and service to professional and civic communities. The department also strives to develop students and faculty who will be recognized as exceptional in their pursuit of excellence, sense of community, spirit of collaboration, and ability to define problems and accomplish goals.

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

Mechanical Engineering graduates are prepared to:

1. Solve mechanical engineering problems in the areas of mechanical systems, thermal/fluid systems, and manufacturing systems by applying fundamental knowledge in mathematics and science.
2. Solve open-ended (design-oriented) problems by judiciously applying the skills of perception, synthesis, analysis, selection/rationale, realization, verification, collaboration, and communication.
3. Collaborate effectively within a professional environment by consistently demonstrating the personal characteristics of productivity, responsibility, integrity, supportiveness, and enthusiasm.
4. Take ownership of their own personal and career advancement.

MECHANICAL ENGINEERING MAJOR

| | | <i>Freshman</i> | |
|----------------------------------|------------------------|---------------------------------------|------------------------|
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| CHEM 1001 ^b | 4 | CHEM 1002 ^b | 4 |
| ENGL 1001 ^f | 3 | Core Rhetoric 1002 ^f | 3 |
| GEEN 1200..... | 3 | GEEN 1210..... | 3 |
| MATH 1450 ^b | 4 | MATH 1451 ^b | 4 |
| Core elective ^c | 3 | Core elective ^c | 3 |
| | 17 | | 17 |

| | | <i>Sophomore</i> | |
|----------------------------------|------------------------|------------------------------|------------------------|
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| MEEN 2110..... | 3 | MEEN 2120..... | 3 |
| GEEN 2952..... | 0 | MEEN 2130..... | 3 |
| MEEN 2460..... | 3 | MEEN 2426..... | 3 |
| MATH 2450..... | 4 | MATH 2451..... | 4 |
| PHYS 1003 ^b | 4 | PHYS 1004 ^b | 4 |
| Core elective ^c | 3 | | |
| | 17 | | 17 |

| | | <i>Junior</i> | |
|------------------------------|------------------------|------------------------------|------------------------|
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| MEEN 3220..... | 3 | MEEN 3250..... | 4 |
| MEEN 3310..... | 3 | MEEN 3270..... | 3 |
| MEEN 3320..... | 3 | MEEN 3330..... | 3 |
| MEEN 3460..... | 3 | MEEN 3443..... | 3 |
| ELEN 3001..... | 3 | PHIL 2310 ^b | 3 |
| PHIL 1001 ^b | 3 | | |
| | 18 | | 16 |

| | | <i>Senior</i> | |
|------------------------------|------------------------|--|------------------------|
| FIRST TERM | ^a SEM. HRS. | SECOND TERM | ^a SEM. HRS. |
| MEEN 3260..... | 3 | MEEN 4998..... | 3 |
| MEEN 3340..... | 3 | MEEN elective..... | 3 |
| MEEN 4920..... | 3 | MEEN elective..... | 3 |
| MEEN 4590..... | 1 | Theology elective..... | 3 |
| MEEN elective..... | 3 | Core elective ^c /Free elective ^d | 3 |
| THEO 1001 ^b | 3 | | |
| | 16 | | 15 |

Total Credit Hours: 133

^a For footnotes b, c, d, e, f refer to the College of Engineering section of this bulletin for details related to these footnotes.

^f 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 Engineering offers a minor in mechanical engineering to all undergraduate students in the university except those students in mechanical engineering. Completion of the minor will be noted on the student's transcript if the following requirements are met:

Thirty hours including the following courses or their equivalents: MEEN 2110, MEEN 2120, MEEN 2130, MEEN 2460, MEEN 3220, MEEN 3250, MEEN 3270, MEEN 3310, MEEN 3330 or MEEN 3340, 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 grade 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

| COURSES | Areas of Study | | |
|--|----------------|---------------|--------------------|
| | Energy Systems | Manufacturing | Mechanical Systems |
| MEEN 2402 Engineering Economy | √ | √ | √ |
| MEEN 4220 Intermediate Dynamics | | √ | √ |
| MEEN 4230 Intermediate Mechanics of Materials | | | √ |
| MEEN 4240 Polymers and Polymer Composites | | √ | √ |
| MEEN 4245 Fatigue and Fracture Mechanics | | | √ |
| MEEN 4250 Design of Machine Elements 2 | | | √ |
| MEEN 4265 Intermediate Finite Element Methods | √ | | √ |
| MEEN 4270 Physical Systems Modeling | | | √ |
| MEEN 4275 Mechatronics | | | √ |
| MEEN 4310 Internal Combustion Engines | √ | | |
| MEEN 4320 Intermediate Fluid Mechanics | √ | | |
| MEEN 4330 Optics, Lasers, and Spectroscopy in Engineering | √ | | |
| MEEN 4350 Transport Phenomena | √ | | |
| MEEN 4360 Intermediate Thermodynamics | √ | | |
| MEEN 4410 Experimental Design | √ | √ | √ |
| MEEN 4420 Failure Analysis | | | √ |
| MEEN 4430 Powder Metallurgy | | √ | √ |
| MEEN 4440 Processing and Forming of Materials | | √ | √ |
| MEEN 4450 Mechanical Behavior of Materials | | | √ |
| MEEN 4470 Industrial Simulation | | √ | √ |
| MEEN 4475 Ergonomics | | √ | |
| MEEN 4480 Metal Forming 1 | | √ | √ |
| MEEN 4485 Welding Engineering | | √ | √ |
| MEEN 4570 Introduction to Biomaterials Science and Engineering | | | √ |
| MEEN 4930 Special Topics in Mechanical Engineering: | √ | √ | √ |
| MEEN 4931 Topics in Mechanical 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 | | <i>Hours</i> |
|---------------------|--|--------------|
| ECON 2003 | Principles of Microeconomics | 3 |
| ECON 2004 | Principles of Macroeconomics | 3 |
| ACCO 2030 | Financial Accounting | 3 |
| ACCO 2031 | Managerial Accounting | 3 |
| BUAD 1002 | Computer Literacy in Business ^a | 0 |
| MANA 2028 | Business and Statistics ^b | 3 |
| FINA 3001 | Financial Management | 3 |
| MANA 3001 | Organizational Behavior ^c | 3 |
| MARK 3001 | Introduction to Marketing ^c | 3 |
| Total | | 24 |

NOTES:

- a. GEEN 1130, 1230, 1131 or BIEN 1120 will substitute for this requirement.
- b. MEEN 2426 or MATH 4720 can substitute for MANA 2028.
- c. Electrical engineering students may utilize either MANA 3001 or MARK 3001 as an EECE/Technical elective, or COEN/technical elective.

2. A C or better grade must be earned in each course.

Careful planning with an academic adviser can minimize the number of additional hours beyond the normal graduation requirements to 15-21 hours depending on the degree program.

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 1450, MATH 1451, MATH 2450, MATH 2451, plus nine additional hours of upper division MATH courses. Overload hours can be minimized 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 1003 or 1013 and PHYS 1004 or 1014, plus 12 additional hours of upper division PHYS courses. Students who take ELEN 3110 or ELEN 3120 may not take PHYS 4031 or PHYS 4032 to satisfy the physics minor requirements; both ELEN 3110 or ELEN 3120 count towards the upper division PHYS course requirements.

COURSE DESCRIPTIONS

GENERAL ENGINEERING (GEEN)

GEEN 1100. 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. *Prereq: Enrolled in Engineering*

GEEN 1110. 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. *Prereq: Enrolled in Engineering*

GEEN 1120. Introduction to Graphics for Engineers 1 sem. hr.

Students learn to visualize geometric information and graphically communicate engineering ideas in three dimensional space. Students are exposed to graphic science and application of computer-aided design software to engineering. Conventional practices are discussed along with the application of geometric data bases to design activities and problem solving. *Prereq: Enrolled in Engineering*

GEEN 1130. Introduction to Engineering Computing 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. *Prereq: Enrolled in Engineering*

GEEN 1131. Introduction to MATLAB 1 sem. hr.

Provides freshmen EECE students with an introduction to a widely used engineering tool through hands-on experience. Engineering problems will be presented and students will learn how to model the problems' solutions using MATLAB. *Prereq: Enrolled in Engineering*

GEEN 1200. Engineering Discovery 1 3 sem. hrs.

This course introduces the student to the practice of multidisciplinary systems engineering and engineering problem solving. Professionalism, teamwork, and technical communication are stressed. The Engineering System Investigation Process (modeling, analysis, and measurement) is applied to fundamental electrical, mechanical, fluid, thermal, and electromechanical systems using MATLAB and LabView. Elementary computer programming is developed. The Engineering Design Process and the role graphical communication - visualization, sketching, and computer graphics - plays in that process is studied. Students become proficient in the use of a three-dimensional computer graphics software. Offered in fall term.

GEEN 1210. Engineering Discovery 2 3 sem. hrs.

Students, working in small teams, apply the Engineering System Investigation Process to actual multidisciplinary products, systems, or processes. Students develop broad technical understanding, as well as in-depth technical knowledge in selected aspects, and also come to appreciate the manufacturing and materials choices, the design decisions, and the business and human-values aspects of the chosen product, system, or process. Internet-based documentation and presentation are emphasized. In addition, engineering computing using MATLAB and LabVIEW, along with computer programming, to solve common multidisciplinary engineering problems is studied. Offered in spring term. *Prereq: GEEN 1200.*

GEEN 1220. Graphical Tools for Design Communication 2 sem. hrs.

Visualization, representation, and communication of spatial objects and assemblies. Project-oriented, computer-based exercises focus on generating models of parts and assemblies and drawing of parts and assemblies. Offered spring term. *Prereq: Enrolled in Engineering*

GEEN 1230. Computational Tools for Problem Solving 2 sem. hrs.

The design of computer-based strategies to solve engineering problems. Standard structured processes for different problem types are identified and then, in exercises, concatenated to solve more complex problems. Both the communication of solution strategy (pseudocode, flowchart), together with its realization and verification in tested code are emphasized. Offered fall term. *Prereq: Enrolled in Engineering*

GEEN 2952. Engineering Orientation Colloquium 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 students are required to attend. *Prereq: Enrolled in Engineering. SNC/UNC grade assessment.*

BIOMEDICAL ENGINEERING (BIEN)

Chairperson and Professor: Ropella
Professor: Brower (Emeritus), Harris, Hendee, Jeutter, Josse, Sances (Emeritus), Seitz, Winters
Adjunct Professor: Battocletti, Cowley, Hoffman, Hudetz, Hyde, Larson, Madden, Merritt, Pintar, Sarna, Schwab, J. Smith, Toth, Wartier, Wertsch, Yoganandan
Associate Professor: Brown, Cariapa, Clough, Goldberg, Krenz, Marklin, Nagurka, Olson, Riedel, Scheidt, Schmit, Silver-Thorn
Adjunct Associate Professor: Abler, Greene, Jodat, Schlager, Schmeling, Soto
Assistant Professor: Audi, Beardsley, Gilat-Schmidt, LaDisa

Adjunct Assistant Professor: Ackman, Bandettini, Boskamp, DeYoe, Donnell, Hause, Hubbard, Liu, Lyon, Marks, Merker, Molthen, M. Johnson, Ninomiya, P. Smith, Patel, Piacsek, Prieto, Rickaby, Schmainda, Shi, Stemper, Street, Ulmer, Wang
Research Assistant Professor: Johnson

BIEN 1100. Introduction to Biomedical Engineering Methods 1 2 sem. hrs.

Introduction to biomedical engineering design and problem solving using. Key elements include physiologic signals and data acquisition, instrumentation, graphics, measurement and error, teamwork and decision-making. Problem-solving elements will be applied to real-world biomedical problems introduced by practicing biomedical engineers as well as faculty.

BIEN 1110. Introduction to Biomedical Engineering Methods 2 2 sem. hrs.

Continuation of BIEN 1100. Key elements include modeling, fluid mechanics, rehabilitation engineering, and entrepreneurship. Problem-solving and design elements are applied to real-world biomedical problems introduced by practicing biomedical engineers as well as faculty. *Prereq: BIEN 1100.*

BIEN 1120. Introduction to Computing for Biomedical Engineers 2 sem. hrs.

Introductory hands-on experience in computer programming, MATLAB, and Solid Modeling and CAD for biomedical engineers. Involves learning linear programming in C and creating flow-charts to solve biomedical applications. Computing topics will include syntax, data types, control flow and algorithm development. Biomedical applications include analyzing physiological signals, biological event detection, and biomechanical analysis. Students learn how to use MATLAB to solve biomedical applications. Solid modeling and CAD will be studied in the context of biomedical engineering design. Laptop required.

BIEN 2100. Statistics for Biomedical Engineering 1 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 1450.*

BIEN 2300. Biomedical 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 P-Spice software. Analysis and design. *Prereq: PHYS 1004 or PHYS 1014.*

BIEN 3200. Computer Applications in Biomedical Engineering 3 sem. hrs.

Design and implementation of computer techniques for the acquisition and analysis of biomedical data and the modeling of physiologic phenomena. Emphasis on physiological data acquisition, statistical description of physiological data, time domain and frequency domain methods for physiological signal conditioning and processing, and numerical methods for quantitative interpretation of physiological data using C programming language. *Prereq: BIEN 1110 or equiv.*

BIEN 3300. Signals and Systems for Biomedical Engineering 3-4 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. 3 hrs. lec.

Prereq: ELEN 2020 with minimum grade of C and MATH 2451; or BIEN 2300 with minimum grade of C and MATH 2451; or ELEN 2020 with minimum grade of C and MATH 2455; or BIEN 2300 with minimum grade of C and MATH 2455.

BIEN 3310. Control Systems for Biomedical Engineering 3 sem. hrs.

Provides an introduction to the principles of control systems theory for biomedical engineers. Mathematical techniques to characterize and design control systems will be studied in the context of physiological, bioelectrical, biochemical and biomechanical systems. Topics include frequency and time-domain modeling of physiological control systems, feedback, stability, steady-state error, design, root-locus, state-space techniques, and nonlinear control. Simulation using MATLAB and Simulink will be used to provide hands-on experience in the design of biomedical control systems. *Prereq: BIEN 3300.*

BIEN 3991. 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 3992, 3994, etc. Fee. SNC/UNC grade assessment.

BIEN 3992. 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 3993. 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 3992, 3994, etc. Fee. SNC/UNC grade assessment.

BIEN 3994. 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 charged for registration for Work Periods. No tuition is charged for Grading Periods. S/U grade assessment.

BIEN 4220. Embedded Biomedical Instrumentation 3 sem. hrs.

Fundamentals of digital circuit design and analysis and the application to embedded biomedical instrumentation. Topics include microprocessor principles and programming and system design constraints for medical electronics. Laboratory will provide applications of concepts introduced in class. Offered spring term. *Prereq: BIEN 2300.*

BIEN 4230. 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 3300 or cons. of instr.*

BIEN 4280. 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 2300, BIEN 4220, BIEN 3300, and BIEN 3200.*

BIEN 4290. Biocomputers Design Lab 2 3 sem. hrs.

Continuation of BIEN 4280 with emphasis on high performance computing in workstation environments. Offered spring term. *Prereq: BIEN 4280.*

BIEN 4320. 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 2300 and BIEN 3300; or ELEN 3030 and ELEN 3020.*

BIEN 4380. Bioelectronics Design Lab 1 3 sem. hrs.

Understanding the principles of operation, safe operating procedures and methods of medical instrument selection. Design of experiments to measure physiological parameters. Typical experiments include: electrical safety; myography; force measurement; operational amplifier characterization; active filter; respiration monitoring. Actual medical instruments used under approximate clinical conditions. Report writing. 2 hrs. lec., 3 hrs. lab. *Prereq: EECE 2015, EECE 2035, ELEN 3030.*

BIEN 4390. Bioelectronics Design Lab 2 3 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 4380 and EECE 3015.*

BIEN 4400. Transport Phenomena 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. *Prereq: MEEN 2120, CEEN 2122, or cons. of instr.*

BIEN 4410. Applied Finite Element Analysis 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., BIEN 1110 and CEEN 2130; or Sr. stndg., CEEN 2130, and GEEN 1220.*

BIEN 4420. 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 engineering that they are interested in. *Prereq: MEEN 2460 or cons. of instr.*

BIEN 4480. 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 2300, MEEN 2120, and CEEN 2130.*

BIEN 4490. Biomechanics Design Lab 2 3 sem. hrs.

Provides students with experience in the design and implementation of appropriate experimental procedures to analyze biomechanical problems. Students will become familiar with various types of advanced transducers which will be used in conjunction with data acquisition workstations to obtain thermal,

flow, strain, and related physiological data from biomechanical systems. Topics include mechanical properties of active muscle; analysis of human motion; postural stability; thermal regulation; cardiovascular mechanics; stress distribution in skeletal system; and comparison of static and dynamic biomechanical responses to load. 2 hrs. lec., 3 hrs. lab.
Prereq: BIEN 4480.

BIEN 4500. Medical Imaging Physics
3 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: PHYS 1004 or PHYS 1014.

BIEN 4510. 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, non-linear and adaptive filters, color image processing, geometrical operations and morphological filtering, image coding and compression image segmentation, feature extraction and object classification.

Applications in diagnostic medicine, biology and biomedical research are emphasized and presented as illustrative examples. *Prereq: MATH 1450 and MATH 1451 or MATH 1455; knowledge of C programming; or cons. of instr.*

BIEN 4600. Neural Engineering 3 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: PHYS 1004 or PHYS 1014.

BIEN 4610. Introduction to Rehabilitation Robotics 3 sem. hrs.

Presents the fundamentals of robotics as it is applied to rehabilitation engineering. Specific topics include: the fundamentals of analysis and design of robot manipulators with examples and mini-projects taken from rehabilitation applications pertaining to robotic therapy devices and personal assistants.

Additional topics include: overview of rehabilitation robotics field, human-centered design of rehabilitation robots issues and challenges, robot configurations, rigid motions and homogeneous transformations, Denavit-Hartenberg representation, robot kinematics, and inverse kinematics, Euler-Lagrange equations, trajectory generation, sensors, actuators, independent joint control, force control and safety.

Prereq: Jr. stndg.

BIEN 4620. Rehabilitation Engineering: Telerehabilitation Research Tools

3 sem. hrs.

Focuses on innovative research tools that can be used for remote assessment and rehabilitative therapy. Topics include an overview of sensorimotor systems that are critical for interactive communication and control, healing processes for functional impairments due to neuromusculoskeletal and cardiopulmonary pathology, tools for human performance and outcomes assessment, videoconferencing and wireless technologies, augmentative communication tools, tools for ergonomic and product usability analysis, accessibility considerations for human-technology interfaces, principles of universal design, and roles for context-aware intelligent systems. Each student will be involved in a team project that develops and evaluates a research protocol utilizing telerehabilitation tools.

Prereq: BIEN 2300 or equiv.

BIEN 4630. Rehabilitation Engineering: Prosthetics, Orthotics, Seating and Positioning 3 sem. hrs.

Presents an overview of biomedical engineering as it applies to Rehabilitation Engineering, specifically, the design and prescription of prosthetic limbs, orthotic devices, and seating and positioning systems. Topics include: medical terminology, musculoskeletal anatomy, muscle mechanics, soft tissue mechanics, gait/locomotion, amputation surgery, lower extremity prosthetics, lower extremity orthotics, hand function, electromyography, upper extremity prosthetics, upper extremity orthotics, seating and positioning, and assistive devices.

Prereq: MEEN 2120 or CEEN 2122.

BIEN 4700. Systems Physiology 3 sem. hrs.

Analyses of the underlying physiologic and bioengineering aspects of the major cell and organ systems of the human from an engineer's point of view.

Classic physiologic approaches used to introduce topics including cell functions, nervous system, nerve, muscle, heart, circulation, respiratory system, kidney, reproduction and biomechanics. Design problems including models of cell-organ-system function and problems in biomechanics illuminate topics covered. Computer techniques and relevant instrumentation are incorporated. Experts on related topics are invited to speak as they are available.

Prereq: Jr. stndg.

BIEN 4710. Analysis of Physiological Models
3 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 2451; or jr. stndg. and MATH 2455.*

BIEN 4720. 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 4700, which must be taken concurrently, or equiv.; and BIEN 4400, which must be taken concurrently, or equiv.; or cons. of instr.*

BIEN 4920. Principles of Design 3 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 two-course sequence). Offered fall term. 2 hrs. lec., 2 hrs. lab.

Prereq: Sr. stndg.; co-op students, jr. stndg. Cross-listed with COEN 4920, ELEN 4920 and MEEN 4920.

BIEN 4931. 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. *Prereq: Jr. stndg.*

BIEN 4991. 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 4992, 4994, etc. Fee. SNC/UNC grade assessment.

BIEN 4992. 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 4993. 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 4992, 4994, etc. Fee. SNC/UNC grade assessment.

BIEN 4994. 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.

BIEN 4995. Independent Study in Biomedical Engineering 1-4 sem. hrs.

Undergraduate independent study project of either a theoretical or experimental nature.

Prereq: Jr. stndg., 3.000 GPA, cons. of instr., and cons. of dept. ch.; or sr. stndg., 3.000 GPA, cons. of instr., and cons. of dept. ch.

BIEN 4998. 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 4920. Cross-listed with COEN 4998, ELEN 4998 and MEEN 4998.

CIVIL AND ENVIRONMENTAL ENGINEERING (CEEN) and (CEMA)

Chairperson: Wenzel

Director of Graduate Studies and Professor: Heinrich
Professor Emeriti: Faherty, Murphy, Zanoni

Professor: Karshenas, Switzenbaum, Vinnakota

Adjunct Professor: Kuemmel

Associate Professor: Crandall, Crovetti, Drakopoulos,
Foley, Melching, Wenzel, Zitomer

Adjunct Associate Professor: Sonntag, Vogel

Assistant Professor: Wan

Adjunct Assistant Professor: Dobersek, Meus

Civil Engineering (CEEN)

CEEN 2110. Statics 3 sem. hrs.

Fundamentals of forces and force systems. Internal and external forces. Support reactions. Definition of a free-body diagram (FBD). Emphasis on development of FBD-drawing skills. Moment of a force. Force system resultants. Vector methods in two and three dimensions. Equilibrium analysis of particles and rigid bodies. Truss analysis by methods of joints and sections. Analysis of simple frames and machines. Analysis of friction. Centroids of composite areas and volumes. Resultants of distributed loads. Offered each term.

Prereq: MATH 1451 or MATH 1455, which may be taken concurrently. Same as MEEN 2110.

CEEN 2120. 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:* CEEN 2110 or MEEN 2110. Same as MEEN 2120.

CEEN 2122. 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 1451 or MATH 1455, which may be taken concurrently. Same as MEEN 2122.

CEEN 2130. Mechanics of Materials

3 sem. hrs.

Concepts of stress, strain and deflection. Factor of safety. Mechanical properties of materials. Stress and deformation calculations for cases of axially loaded rods, torsion of circular shafts, beam bending and combined loading. Horizontal shear connectors in built-up beams. Area moment of inertia. Parallel-axis theorem. Introduction to beam design. Stress concentration. Stress transformation and principal stress calculation by Mohr's circle. Statically indeterminate analysis. Elastic buckling of columns. Offered each term. *Prereq:* CEEN 2110 or MEEN 2110. Same as MEEN 2130.

CEEN 2310. 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 3150. 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. Same as MEEN 3320.

CEEN 3160. 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:* CEEN 2130 or MEEN 2130.

CEEN 3210. Hydraulic Engineering 3 sem. hrs.

Fundamentals and applications of hydrostatics and hydrodynamics including pressurized pipe flow and pipeline network design, open channel flow, and sewer design, pump selection and flow measurement. Laboratory assignments and demonstrations. Offered spring and summer terms. 2 hrs. lec., 2 hrs. lab. *Prereq:* CEEN 3150 or MEEN 3320.

CEEN 3220. River Engineering 3 sem. hrs.

Basic principles of open-channel hydraulics, flow resistance, gradually-varied flow, rapidly-varied flow, hydrologic and hydraulic flood routing, and river restoration/ naturalization. *Prereq:* CEEN 3210.

CEEN 3320. 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 spring term. 2 hrs. lec., 2 hrs. lab. *Prereq:* CEEN 2130 or MEEN 2130, which may be taken concurrently.

CEEN 3410. Structural Analysis 3 sem. hrs.

Determining the loads that act on structures and load combinations. Basic concepts in structural analysis of determinate beams, trusses, and frames. Deflections of determinate beams by moment area and conjugate beam methods. Development of basic virtual work concept to obtain deformations in determinate trusses, beams, and frames. Introduction to the solution of indeterminate structures by using the method of superposition. Influence lines for determinate beams. *Prereq:* CEEN 2130 or MEEN 2130.

CEEN 3430. Steel Design 1 3 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 3410.

CEEN 3440. 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 3410.

CEEN 3510. Environmental Engineering

3 sem. hrs.

Introduction to environmental engineering with a focus on the water environment. Topics include water quality, water resources, water supply, municipal water and wastewater systems, air quality, and solid and hazardous waste management. Offered fall term. *Prereq:* Jr. stndg.

CEEN 3610. 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 airside systems based on FAA guidelines. Road user and vehicle characteristics, geometric design of roadways including horizontal and vertical alignment and cross-sectional elements. Signalized intersections. Emphasis on technical-report writing. Offered spring term. *Prereq:* Jr. stndg.

CEEN 3615. 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 3610 or cons. of instr.

CEEN 3620. Highway Interchange Design 3 sem. hrs.

Planning, analysis, design and operational analysis of highway interchanges. Determination and adaptability of interchange types for freeway to freeway and service interchanges. Offered alternate fall terms. *Prereq:* CEEN 3610.

CEEN 3625. Urban Street Design 3 sem. hrs.

Planning consideration, highway system components, design elements, including horizontal and vertical alignment, cross section elements, sight distance, intersections, parking, one way streets, mass transit and bicycle considerations.

Prereq: CEEN 3610.

CEEN 3630. Airport Planning and Design 3 sem. hrs.

Introduction to airport planning and design parameters, aircraft characteristics, payload versus range, runway length requirements, air traffic control, wind analysis, airside capacity and delay, airside separation criteria, terminal analysis and delay, airport access flow and capacity, ramp charts. Economic analysis of facility improvements. Offered fall term. *Prereq:* CEEN 3610 or cons. of instr. This course is a design elective.

CEEN 3640. 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 3610 or cons. of instr.

CEEN 3645. Traffic Engineering 3 sem. hrs.
Design, analysis and use of traffic control devices. Traffic administration, traffic flow theory, and highway capacity. An introduction to computer and traffic engineering. Offered spring term.
Prereq: CEEN 3640 or cons. of instr.

▲CEEN 3720. Decent and Affordable Housing 3 sem. hrs.

Through helping to construct a Habitat for Humanity house; through listening to and debating with guest lecturers who are helping to build housing units for low income people; and through reading and discussing books, articles, and other selected documents that focus on the problems of the central cities, the students will learn that decent and affordable housing is an issue of social justice and it can become a reality wherever there is a will to make it happen.

CEEN 3730. Engineers and Technology Through History 3 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 3991. 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 3991, 3992, etc. Offered every term. Fee. SNC/UNC grade assessment.

CEEN 3992. 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 3993. 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 3991, 3992, etc. Offered every term. Fee. SNC/UNC grade assessment.

CEEN 3994. 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 4145. 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 alternate years. *Prereq: CEEN 2130 or MEEN 2130.*

CEEN 4230. 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: CEEN 3150, or MEEN 3320.

CEEN 4240. 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. *Prereq: CEEN 3210.*

CEEN 4250. 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.
Prereq: CEEN 3210 and CEEN 3510.

CEEN 4310. 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. Offered spring term. *Prereq: Sr. stndg.*

CEEN 4320. Engineering Decisions Under Uncertainty 3 sem. hrs.

Application of probability and statistics to modeling, analysis and design of civil engineering systems. Topics include: probability theory, decision theory, utility theory, and simulation. Offered spring term.
Prereq: Sr. stndg.

CEEN 4340. 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.

CEEN 4350. 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 4411. Matrix Structural Analysis 3 sem. hrs.

Introduction to symbolic and numerical linear algebra computations using commercial software. Modeling axial, bending, and torsion deformations in structural members using polynomials. Application of the principle of virtual work to compute deflections for statically determinate and indeterminate problems. Formulation of the matrix stiffness method via the principle of virtual displacements and the matrix flexibility method via the principle of virtual

forces. Application of the matrix stiffness method for solving statically indeterminate structural analysis problems. Use of approximate methods of structural analysis (cantilever and portal methods) for critical evaluation of software-generated solutions. Use of commercial software for structural analysis. Offered fall term. *Prereq: CEEN 3410.*

CEEN 4431. Steel Design 2 3 sem. hrs.

Continuation of CEEN 3430. Design of steel beam-columns, continuous beams, composite beams and composite columns. Design of bolted and welded joints, connections, and sub-assemblages. Design of steel building structures. Offered spring term.
Prereq: CEEN 3430.

CEEN 4441. Advanced Concrete and Masonry Design 3 sem. hrs.

Continuation of CEEN 3440, 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. *Prereq: CEEN 3440.*

CEEN 4442. 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. *Prereq: CEEN 3440.*

CEEN 4450. Bridge Design 3 sem. hrs.

Introduction to bridge engineering and construction including: an abbreviated history of bridge construction; bridge types; bridge nomenclature; lessons from failures; design philosophies; and the construction process. Analysis of single- and multi-span bridge superstructures using classical techniques and commercial software. Design of single-span reinforced concrete slab bridges; reinforced concrete bridge decks; and single-span slab-bridges in prestressed concrete. Offered spring term.
Prereq: CEEN 3430 and CEEN 3440.

CEEN 4460. 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. *Prereq: CEEN 3160.*

CEEN 4515. 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 CHEM 1002.

CEEN 4520. 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 3510.*

CEEN 4525. 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 3510.*

CEEN 4530. 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 4535. Environmental Engineering Microbiology 3 sem. hrs.

Includes microbiological and biochemical properties of microorganisms important in environmental engineering practice. General fundamentals of environmental microbiology and their application to drinking water treatment and distribution, water pollution control, and natural systems. Offered alternate spring terms. *Prereq: CEEN 3510 or cons. of instr.*

CEEN 4540. Municipal Solid Waste Management 3 sem. hrs.

Introduction to municipal solid waste management and hazardous wastes associated with municipal solid wastes. Emphasizes the relationship between the properties of wastes, the techniques and hardware used for waste handling and processing and the ultimate disposal (containment) of waste and other residual materials. Covers remediation of orphaned landfills. Examines the design of systems for the management and disposal of solid and hazardous wastes subject to economic factors, safety, reliability and ethical and social implications. Offered spring term alternate years. *Prereq: CEEN 3510.*

CEEN 4545. 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 4650. 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. Offered fall terms.

CEEN 4660. Pavement Management 3 sem. hrs.

Study of the performance of pavement systems based on design, traffic and maintenance activities. Methods for evaluating in-service pavements including condition surveys, nondestructive testing and destructive testing. Development of maintenance strategies for highway and airfield pavements and life-cycle cost analysis of these strategies. Offered spring term. *Prereq: CEEN 4650 or cons. of instr.*

CEEN 4670. Advanced Transportation Materials 3 sem. hrs.

Advanced study of materials used for constructing transportation facilities, with particular emphasis on subgrade soils, bound and unbound aggregates, hot mix asphalt and Portland cement concrete. Laboratory test methods and analytical models used for characterizing transportation materials will be examined. Variations in material properties as a result of loading and environmental factors will be addressed. Offered fall terms. *Prereq: CEEN 2320 and CEEN 3160.*

CEEN 4710. Engineering Fundamentals Review 1 sem. hr.

Review of basic science, mathematics, engineering science and economics. Offered every term. S/U grade assessment. *Prereq: Sr. stndg. Same as MEEN 4590.*

CEEN 4715. Sustainable Engineering 3 sem. hrs.

Overview of sustainable engineering principles including environmental, economic and social equity issues. Tools, such as mass and energy balances and life cycle assessment will be covered. Other topics include global warming, green house gases, green engineering, clean manufacturing, and sustainable management of energy and natural resources. *Prereq: CEEN 3510 or cons. of instr.*

CEEN 4740. Health, Environment, and Infrastructure in Latin America 3 sem. hrs.

Students will explore the relationship between Latin American culture and engineering infrastructure. Emphasis is placed on alleviation of poverty and international development. Students will become familiar with (1) Latin American culture, history, and politics, (2) peace and justice issues, (3) water treatment, wastewater treatment, and environmental protection (4) engineering infrastructure, and (5) health care issues. The needs of developing countries and the advantages and disadvantages of highly developed infrastructure systems will be highlighted. Students are asked to reflect on the importance of engineering works in light of lecture and reading viewpoints, with the goal of gaining a richer understanding of the implications of culture within infrastructure development. The course will culminate in each student writing a paper combining information gained through reading, lecture, and service learning to emphasize a course-related topic. Participation in an international or domestic service learning project is required. A variety of projects will be made available by the instructor.

CEEN 4931. Topics in Civil Engineering 1-3 sem. hrs.

Course content announced each term. *Prereq: Cons. of instr.*

CEEN 4953. 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. Offered each term. SNC/UNC grade assessment.

CEEN 4991. 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 4991, 4992, etc. Offered every term. Fee. SNC/UNC grade assessment.

CEEN 4992. 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 4993. 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 4991, 4992, etc. Offered every term. Fee. SNC/UNC grade assessment.

CEEN 4994. 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.

CEEN 4995. Independent Study in Civil and Environmental Engineering 1-3 sem. hrs.

Undergraduate independent study project of either a theoretical or experimental nature. *Prereq: Jr. stndg., 3.000 GPA, cons. of instr., and cons. of dept. ch.*

CEEN 4997. Civil Engineering Capstone Design 4 sem. hrs.

Design of selected civil engineering projects including planning, preliminary analysis and final design. Different projects are selected each year. Students are assigned to project teams with specific tasks under the direction of a faculty course coordinator. Professional engineers from local firms propose projects and act as consultants to each design team. Emphasis is placed on student initiative, responsibility and resourcefulness in an open-ended project. A final written design report and oral presentation are required for each design team. Emphasis on technical communications, professional ethics and engineering practices. Offered spring term. 3 hrs. lec., 3 hrs. lab. *Prereq: CEEN 3430 and CEEN 3440, or cons. of instr.*

Construction Engineering and Management (CEMA)

CEMA 3810. Introduction to Construction Management 3 sem. hrs.

Construction contracts, contract bonds, construction funding, cash flow analysis, labor productivity and cost. Analytical techniques for project planning and scheduling. Construction safety. Offered fall term. *Prereq: Sr. stndg and MEEN 2402; or cons. of instr.*

CEMA 3850. Construction Equipment and Methods 3 sem. hrs.

Construction equipment and productivity analysis. Design of equipment fleet operations. Building construction methods and design of temporary structures used during construction such as earth-retaining structures, formwork systems, and temporary bracing systems. Safety standards related to earthwork, concrete, masonry, carpentry and steel operations. Offered fall term. *Prereq: Sr. stndg.*

CEMA 3860. Construction Materials and Methods 3 sem. hrs.

Introduction to materials and methods of building construction and to construction drawings. Foundation, structural framing, floor, room and wall systems. Blueprint reading and quantity takeoff techniques. An introduction to building information modeling. *Prereq: CEMA 3810.*

CEMA 3991. Co-op Work Period 1 0 sem. hrs. Registration for approved cooperative program work assignments is required for all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3992. Offered every term. SNC/UNC grade assessment.

CEMA 3992. 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.

CEMA 3993. Co-op Work Period 2 0 sem. hrs. Registration for approved cooperative program work assignments is required for all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 3994. Offered every term. SNC/UNC grade assessment.

CEMA 3994. 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.

CEMA 4815. Mechanical and Electrical Systems for Buildings 3 sem. hrs.

Provides basic knowledge of electrical, plumbing and HVAC systems used in residential, commercial and industrial buildings. Studies the advantages and disadvantages of various systems, and how their design and installation integrates into the management of the building process. Particular attention is given to soliciting and managing mechanical and electrical subcontractors. *Prereq: PHYS 1004.*

CEMA 4820. Construction Operations and Productivity 3 sem. hrs.

Study of construction operations with emphasis on productivity measurement and enhancement. Application of an integrated approach to planning, analysis and design of construction operations. Application of simulation models and other analytical tools for modeling construction operations. Study of productivity improvement strategies, including lean construction principles. *Prereq: Senior standing.*

CEMA 4825. E-Business in the Construction Industry 3 sem. hrs.

Explores the ways in which information technology and its Internet components help to provide competitive advantage for construction companies. Selection/implementation of Web-based project management tools. An investigation of digital technologies in construction industry. Wire/wireless communication, online plan/bid rooms, mobile computing, and video conferencing. *Prereq: Senior standing.*

CEMA 4830. Construction Planning, Scheduling and Control 3 sem. hrs.

A study of principles and techniques used to plan, schedule and control costs on building construction projects. Network and linear scheduling models, resource allocation and time-cost analysis. Develops an appreciation of the resources required in a project and their limitations and introduces the techniques for analyzing and improving their use. Develops an understanding of the correlation between project planning and control and cost estimating and scheduling. *Prereq: CEMA 4825.*

CEMA 4840. Construction Cost Analysis and Estimating 3 sem. hrs.

Study of various cost estimating methods and their applications. Topics include: labor, material, equipment and indirect costs; quantity takeoff; analysis of historical cost data; forecasting and computerized estimating methods. Offered spring term. *Prereq: CEMA 3810 and CEMA 3850 or cons. of instr.*

CEMA 4991. Co-op Work Period 3 0 sem. hrs. Registration for approved cooperative program work assignments is required for all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4992. Offered every term. SNC/UNC grade assessment.

CEMA 4992. 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.

CEMA 4993. Co-op Work Period 4 0 sem. hrs. Registration for approved cooperative program work assignments is required for all co-op students. Grading and credits are accomplished in the accompanying following term when registered for courses numbered 4994. Offered every term. SNC/UNC grade assessment.

CEMA 4994. 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.

ELECTRICAL AND COMPUTER ENGINEERING (EECE), (COEN) and (ELEN)

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
Associate Professor and Director of Undergraduate Computer Engineering Laboratories: Povinelli
Professor and Director of Graduate Studies: Josse
Professor Emeriti: Heinen, Hock, Ishii
Professor: Corliss, Demerdash, Heinrich, Jaskolski, Joshi, Jeutter, Matthys, Seitz
Associate Professor: Brown, Feng, Johnson, Richie
Adjunct Associate Professor: Davis, Schmidt
Adjunct Assistant Professor: Deibebe, Kelnhofer
Adjunct Professor: Datkos, Pistré
Research Professor: Arkadan
Research Associate Professor: Hirthe
Research Assistant Professor: Koehler

Electrical and Computer Engineering (EECE)

Curriculum Coordinator: Schneider

EECE 1610. 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.

EECE 2010. Electric Circuits 1 3 sem. hrs.

Ohm's law and Kirchhoff's laws. Mesh and loop analysis of resistive circuits with DC sources. Source transformations. Thevenin's and Norton's theorems. Natural and step response of first- and second-order circuits. Circuits with ideal op amps. Offered fall term. *Prereq: MATH 1451 or MATH 84, which may be taken concurrently.*

EECE 2015. 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 resistors, inductors, capacitors and op-amps are used. Emphasis placed on DC and transient response of circuits. 1 hr. lec., 2 hrs. lab. EECE 2010 must be taken concurrently.

EECE 2030. Digital Electronics 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 2035. 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 3010, which may be taken concurrently, EECE 2010 with minimum grade of C, ELEN 2020, which may be taken concurrently, and EECE 2015 with minimum grade of C.*

EECE 2710. Introduction to Computer Hardware and Software 3 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 management, input/output, file management, scheduling, resource management. Layered operating system design, programming languages and language translators, application layer design, software tools, and system design and design process. Programming exercises in machine and assembly language and in the JAVA programming language. Offered fall term. *Prereq: EECE 1610 or COSC 1010.*

EECE 3010. 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 2010 with minimum grade of C.*

EECE 3015. 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: ELEN 2020 with a minimum grade of C and EECE 2710, which may be taken concurrently; or ELEN 2020 with a minimum grade of C and BIEN 3200, which may be taken concurrently.*

EECE 4410. Integrated Microelectronic Circuits 3 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 3010 and ELEN 2020.*

EECE 4510. 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: ELEN 3020 or COEN 2020.*

Computer Engineering (COEN)

Curriculum Coordinator: Riedel

COEN 1953. 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 first-year COEN students to interact with their peers and other members of the ELEN Department. Cross listed with ELEN 1953. SNC/UNC grade assessment.

COEN 2020. Electric Circuits 2 3 sem. hrs. Sinusoidal steady-state analysis. Power in AC circuits. Linear and ideal transformers. Laplace transform methods and circuit analysis applications. Passive and active frequency-selective circuits. Fourier methods. Overview of discrete-time analysis. Offered spring term. *Prereq: EECE 2010 with minimum grade of C.*

COEN 2610. 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: EECE 1610 or COSC 1010.*

COEN 3991. 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 3992, 3994, etc. Fee. SNC/UNC grade assessment.

COEN 3992. 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 3993. 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 3992, 3994, etc. Fee. SNC/UNC grade assessment.

COEN 3994. 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 4610. Object-Oriented Software Engineering 3 sem. hrs. Presents advanced software engineering concepts in the context of object-oriented analysis and design. Topics include: issues and applications, requirements engineering, software specifications, modeling notations, software quality, testing and

correctness, software reuse, and reverse engineering. COEN design elective in the area of software. *Prereq: COEN 2610 or COSC 1020.*

COEN 4620. Modern Programming Practices 3 sem. hrs.

Explores advanced topics in computer programming. Topics may include: design patterns, advanced graphical components, software component models such as Java Beans, the Java Security model, Java and databases, servlets, Java Server Pages, and Enterprise Java Beans. COEN design elective in the areas of applications and software. *Prereq: COSC 2100 or COSC 2010.*

COEN 4630. Software Testing 3 sem. hrs. Examines the relationship of software testing to quality, emphasizing testing techniques and the role of testing in the validation of system requirements. Topics include: module and unit testing, integration, walkthroughs and inspections, verification and validation, preventing and detecting errors, selecting and implementing project metrics, and defining test plans and strategies traced from system requirements. COEN design elective in the areas of applications and software. *Prereq: EECE 2710, COSC 2100, COSC 2010, or equivalent experience.*

COEN 4650. Introduction to Algorithms 3 sem. hrs.

Introduction to the algorithms analysis. Topics to be covered include: the concepts of time and space complexity, advanced data structures, general issues in problem solving methodologies, greedy algorithms, dynamic programming, graph algorithms, AI-related algorithms, and an introduction to NP-completeness theory. COEN design elective in the area of intelligent systems. *Prereq: EECE 2710 or COSC 2200 or equiv.*

COEN 4690. Developments in Computer Software 3 sem. hrs. Course content is announced prior to each semester. Students may enroll in the course more than once because subject matter changes. COEN design elective. *Prereq: Cons. of instr.*

COEN 4710. Computer Hardware 3 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: EECE 2710 with minimum grade of C and EECE 2030 with minimum grade of C; or COSC 2200 with minimum grade of C and EECE 2030 with minimum grade of C.*

COEN 4720. Embedded Systems Design 3 sem. hrs.

This course introduces students to embedded systems, the types of hardware that can support such systems, and the interfacing used in embedded systems. The course is a combined laboratory and lecture course, which directly applies the embedded systems techniques using hardware description and assembly languages to field programmable gate array technology. Design elective for Electrical and Computer Engineering majors. *Prereq: COEN 4710 and EECE 3015.*

COEN 4730. Computer Architecture 3 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. COEN design elective in the area of hardware. *Prereq: Sr. stndg., 3.000 GPA, and COEN 4710; or cons. of instr.*

COEN 4790. Developments in Computer Hardware 3 sem. hrs.

Course content is announced prior to each semester. Students may enroll in the course more than once because subject matter changes. COEN design elective. *Prereq: Cons. of instr.*

COEN 4810. Database Applications 3 sem. hrs. Presents the design and application of databases.

Topics include: models for databases, database query languages, database design methods, methods for storing and retrieving information from a database, database optimizations, transaction processing, and a brief examination of some advanced concepts, including object databases, distributed databases and database security. COEN design elective in the area of applications.

Prereq: COSC 2100 or COSC 2010 or equiv.

COEN 4820. Operating Systems and Networking 3 sem. hrs.

Introduces the fundamental concepts of operating systems together with the basics of networking and communications including: memory management, scheduling, concurrent processing, device management, file systems, networking, security, and system performance. Examples are drawn from legacy and modern operating systems. Design elective for Electrical and Computer Engineering majors.

Prereq: COSC 2100 or COSC 2010.

COEN 4830. Introduction to Computer Graphics 3 sem. hrs.

Introduction to computer graphics algorithm design and implementation; includes considerable actual computer graphics experience. Topics include: point-plotting and line-drawing techniques, two-dimensional curve fitting, two-and three-dimensional graphics, clipping, windowing, hidden line removal, modeling, input-output devices, and other topics as future trends dictate. COEN design elective in the area of applications. *Prereq: Proficiency in at least one high level computing language.*

COEN 4840. Computer Security 3 sem. hrs.

Introduction to the important issues in computer security, including cryptography, program security, operating system security, database security, and network security. Also discusses the legal, ethical and privacy issues that arise in computer security. Programming projects enable the student to practice implementing many of the security measures discussed in class. COEN design elective in the areas of software, intelligent systems and applications. *Prereq: COSC 2100 or COSC 2010 or equiv.*

COEN 4850. Introduction to Intelligent Systems 3 sem. hrs.

Provides a broad exposure to intelligent systems, including related fields such as artificial and computational intelligence. Topics include: intelligent agents, search, game playing, propositional logic and first-order predicate calculus, uncertainty, learning, communication and perception, and philo-

sophical foundations of intelligent systems. COEN design elective in the area of intelligent systems.

Prereq: COSC 2100 or COSC 2010; MATH 1450; MATH 2100 or MATH 2105.

COEN 4860. Introduction to Neural Networks and Fuzzy Systems 3 sem. hrs.

Concepts of neural network architectures training algorithms, supervised and unsupervised learning, linear and non-linear neural networks, feedback neural networks, applications in scientific and engineering areas, fundamentals of fuzzy sets, and fuzzy logic, fuzzy rules and inference systems, fuzzy pattern classification and clustering analysis, and fuzzy control systems. COEN design elective in the area of intelligent systems.

Prereq: COSC 2100 or COSC 2010 and MATH 1451.

COEN 4870. Evolutionary Computation 3 sem. hrs.

Evolutionary computation consists of a set of search methods based on the Darwinian principle of survival of the fittest. The methods include genetic algorithms, evolutionary strategies, and evolutionary and genetic programming. These methods have been successfully applied to many different problem domains including optimization, learning, control, and scheduling. Provides students with the background and knowledge to implement various evolutionary computation algorithms, discusses trade-offs between different evolutionary algorithms and other search methods, and discusses issues related to the application and performance evaluation of evolutionary algorithms. COEN design elective in the area of intelligent systems. *Prereq: COSC 2100 or COSC 2010 and MATH 1450; and MATH 2100 or MATH 2105.*

COEN 4890. Computer Applications

1-3 sem. hrs.

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include advanced hardware (MPP, EPIC, VLIV), advanced software (enterprise systems, embedded software, real-time software) and advanced intelligent systems.

Prereq: for COEN 4890: Cons. of instr. or Sr. stndg.

COEN 4920. 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, Jr. stndg. Cross-listed with BIEN 4920, ELEN 4920 and MEEN 4920.

COEN 4991. 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 4992, 4994, etc. Fee. SNC/UNC grade assessment.

COEN 4992. 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 4993. 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 4992, 4994, etc. Fee. SNC/UNC grade assessment.

COEN 4994. 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.

COEN 4995. Independent Study in Computer Engineering 1-4 sem. hrs.

Undergraduate independent study project of either a theoretical or experimental nature.

Prereq: Jr. stndg., 3.000 GPA, cons. of instr., and cons. of dept. ch.; or Sr. stndg., 3.000 GPA, cons. of instr., and cons. of dept. ch.

COEN 4998. 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 4920; Cross-listed with BIEN 4998, ELEN 4998 and MEEN 4998.*

Electrical Engineering (ELEN)

Curriculum Coordinator: Schneider

ELEN 1953. 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 first-year EECE students to interact with their peers and other members of the EECE Department. SNC/UNC grade assessment.

ELEN 2020. Electric Circuits 2 3 sem. hrs.

Sinusoidal steady-state analysis. Power in AC circuits. Linear and ideal transformers. Laplace transform methods and circuit analysis applications. Passive and active frequency-selective circuits. Balanced three-phase circuits. Two-port circuits. Offered spring term.

Prereq: EECE 2010 with minimum grade of C.

ELEN 3001. 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 1004 or PHYS 1014. May not be taken for credit by EECE students.

ELEN 3002. 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: PHYS 1004 or PHYS 1014.

ELEN 3020. 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. Offered fall term.

Prereq: ELEN 2020 with minimum grade of C and MATH 2451; or ELEN 3002 with minimum grade of C and MATH 2451; or BIEN 2300 with minimum grade of C and MATH 2451; or ELEN 3001 with minimum grade of C and MATH 2451.

ELEN 3025. Electrical Instrumentation Laboratory

2 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 3010 with minimum grade of C, ELEN 2020 with minimum grade of C, and EECE 2015 with minimum grade of C.

ELEN 3030. Analog Electronics

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 3010 with minimum grade of C and ELEN 2020 with minimum grade of C.

ELEN 3035. 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: ELEN 3030 with minimum grade of C and ELEN 3025 with minimum grade of C.*

ELEN 3110. 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: ELEN 2020 with*

minimum grade of C, MATH 2450, PHYS 1004 or PHYS 1014 and knowledge of a higher level computer language.

ELEN 3120. Electromagnetic Fields 2

3 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, wave-guides and transmission lines. Offered spring term.

Prereq: ELEN 3110 with minimum grade of C.

ELEN 3210. Electric Drives

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. Operation of electric machinery from solid-state power switch converters. Offered spring term.

Prereq: ELEN 3110 with minimum grade of C.

ELEN 3991. 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 3992, 3994, etc. Fee. SNC/UNC grade assessment.

ELEN 3992. 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.

ELEN 3993. 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 3992, 3994, etc. Fee. SNC/UNC grade assessment.

ELEN 3994. 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.

ELEN 4015. 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.

ELEN 4090. Developments in Electronics

1-3 sem. hrs.

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include laser electronics, optoelectronics and photonics, RF circuit design, SOC design. *Prereq: Cons. of instr. or Sr. stndg.*

ELEN 4130. 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. DESIGN ELECTIVE.

Prereq: ELEN 3120.

ELEN 4150. 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, magnetostatic and electrostatic analysis, and the use of commercially available software packages.

Prereq: ELEN 3110 or equiv.

ELEN 4190. Developments in Electromagnetics

1-3 sem. hrs.

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include wireless and microwave components and systems, electromagnetic compatibility, radio wave propagation.

Prereq: for ELEN 4190: Cons. of instr. or Sr. stndg.

ELEN 4210. Design and Analysis of Electric Motor-Drive Systems

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: ELEN 2020 or equiv., ELEN 3110 or equiv., and ELEN 3210 or equiv.*

ELEN 4220. Power Electronics for Renewable Energy Systems

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: ELEN 3030 and ELEN 3020.

ELEN 4230. Electric Energy Systems Analysis

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: ELEN 2020 and ELEN 3020.

ELEN 4240. Protection and Monitoring of Electric Energy Systems

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 12 or equiv., EECE 121 or equiv., and EECE 123 or equiv.*

ELEN 4250. Transients in Electric Energy 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: ELEN 2020 or equiv. and ELEN 3110 or equiv.

ELEN 4290. Developments in Energy and Power

1-3 sem. hrs.

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include electronics for machine and drive systems, electrical transients, faults and diagnostics and protection in power devices and systems, renewable energy systems and advanced topics in the electric power engineering area. *Prereq: cons. of instr. or Senior Standing.*

ELEN 4310. 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: ELEN 3020.*

ELEN 4320. Digital Control Systems

3 sem. hrs.

Review of sampling processes, discrete time linear systems analysis and z-transform. Discrete time and sampled data state-variable analysis. Stability analysis, time domain and frequency-domain analysis and design. Analysis, design and computer implementation of digital algorithms and control systems. Design Elective. *Prereq: ELEN 3020 with minimum grade of C.*

ELEN 4390. Developments in Control

1-3 sem. hrs.

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include optimal, adaptive and robust control methods, digital control and non-linear systems.

Prereq: Cons. of instr. or Senior Standing.

ELEN 4430. 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 3010 with minimum grade of C, ELEN 3110 with minimum grade of C, and PHYS 1004 or PHYS 1014.*

ELEN 4450. Surface Acoustic Wave Devices

3 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: ELEN 3020 and ELEN 3110; or cons. of instr.*

ELEN 4460. 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.

ELEN 4490. Developments in Devices

1-3 sem. hrs.

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include optoelectronic devices, nano-scale devices, solid-state devices, integrated electronic devices, power devices, electro-mechanical devices, quantum devices.

Prereq: Cons. of instr. or Sr. stndg.

ELEN 4550. Developments in Signal Processing

1-3 sem. hrs.

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include filter design, DSP hardware, Nonlinear signal processing and multi-dimensional signal processing. *Prereq: for ELEN 4550:*

Cons. of instr. or Sr. stndg. for EECE 5550: Cons. of instr. or graduate stndg.

ELEN 4560. 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: ELEN 3020.*

ELEN 4565. Optical Fiber Communications

3 sem. hrs.

Fundamental principles and theories of optical fiber systems are introduced and developed. Review of electromagnetic principles of wave-guides. Step-Index and Graded-Index, single and multimode fibers. Signal analysis in optical fibers: mode interaction, attenuation, dispersion and pulse spreading. Operating characteristics of optical sources and photo-receivers with impact on system performance. Coupling to a fiber and distribution system. Optical fiber communication system design. Design Elective. *Prereq: Sr. stndg. and ELEN 3110.*

ELEN 4570. Wireless Communications

3 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: ELEN 3020 and ELEN 3110.

ELEN 4590. Developments in Communications

1-3 sem. hrs.

Course content is announced prior to each term. Students may enroll in the course more than once because subject matter changes. Depending upon the subject matter and the instructor, the class may be taught in traditional lecture format or as a seminar which focuses on readings from the current literature. Possible topics include digital modulation and detection, coding theory, information theory.

Prereq: Cons. of instr. or Sr. stndg.

ELEN 4920. Principles of Design

3 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, jr. stndg. Cross-listed with BIEN 4920, COEN 4920 and MEEN 4920.

ELEN 4991. 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 4992, 4994, etc. Fee. SNC/UNC grade assessment.

ELEN 4992. 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.

ELEN 4993. 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 4992, 4994, etc. Fee. SNC/UNC grade assessment.

ELEN 4994. 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.

ELEN 4995. Independent Study in Electrical Engineering 1-4 sem. hrs.

Undergraduate independent study project of either a theoretical or experimental nature. *Prereq: Jr. stndg., 3.000 GPA, cons. of instr., and cons. of dept. ch.*

ELEN 4998. Senior Design Project 3 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: ELEN 4920. Cross-listed with BIEN 4998, COEN 4998 and MEEN 4998.*

MECHANICAL ENGINEERING (MEEN)

Chairperson and Professor: Kim
Associate Chairperson and Director of Undergraduate Studies: Fournelle
Director of Graduate Studies: Rice
Professor: Fournelle, Harris, Heinrich, Marklin, Schimmels, Seitz, Stango, Widera
Professor Emeriti: Blumenthal, Brebrick, Brower, Matar, Nigro, Reid
Research Professor: Gaggioli
Adjunct Professor: Stilp
Associate Professor: Borg, Cariapa, Domblesky, Jensen, Nagurka, Rice, Silver-Thorn, Weber
Research Associate Professor: Park
Adjunct Associate Professor: Shana, Toth
Assistant Professor: Goldsborough, Koch, Voglewede
Research Assistant Professor: Bowman, Huang

MEEN 2110. Statics 3 sem. hrs.

Fundamentals of forces and force systems. Internal and external forces. Support reactions. Definition of a free-body diagram (FBD). Emphasis on development of FBD-drawing skills. Moment of a force. Force system resultants. Vector methods in two and three dimensions. Equilibrium analysis of particles and rigid bodies. Truss analysis by methods of joints and sections. Analysis of simple frames and

machines. Analysis of friction. Centroids of composite areas and volumes. Resultants of distributed loads. Offered each term. *Prereq: MATH 1451 or MATH 2566, which may be taken concurrently. Same as CEEN 2110.*

MEEN 2120. 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: CEEN 2110 or MEEN 2110. Same as CEEN 2120.*

MEEN 2122. 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 1451 or MATH 1455, which may be taken concurrently. Same as CEEN 2122.*

MEEN 2130. Mechanics of Materials 3 sem. hrs.

Concepts of stress, strain and deflection. Factor of safety. Mechanical properties of materials. Stress and deformation calculations for cases of axially loaded rods, torsion of circular shafts, beam bending and combined loading. Horizontal shear connectors in built-up beams. Area moment of inertia. Parallel-axis theorem. Introduction to beam design. Stress concentration. Stress transformation and principal stress calculation by Mohr's circle. Statically indeterminate analysis. Elastic buckling of columns. Offered each term. *Prereq: CEEN 2110 or MEEN 2110. Same as CEEN 2130.*

MEEN 2402. 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 spring term.

MEEN 2426. Engineering Statistics 3 sem. hrs.

This course covers the solution of non-deterministic problems in engineering along with 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 1451.*

MEEN 2460. 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: CHEM 1001.*

MEEN 3220. 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 fall term. *Prereq: MATH 2451 or MATH 2445; and CEEN 2120 or MEEN 2120.*

MEEN 3250. Design of Machine Elements 1

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: CEEN 2110 or MEEN 2110; and CEEN 2130 or MEEN 2130.*

MEEN 3260. Numerical Methods in Mechanical Systems 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: MEEN 3220 and CEEN 2130 or MEEN 2130.*

MEEN 3270. 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 spring term. 2 hrs. lec., 2 hrs. lab. *Prereq: MATH 1451 and PHYS 1004 or PHYS 1014; or ELEN 3001 and MATH 1451.*

MEEN 3310. Thermodynamics 1 3 sem. hrs.

Elementary principles of equilibrium thermodynamics of pure and mixed substances, including applications to systems and processes. Relationships between heat and work, the first law of thermodynamics, are applied to either open or closed systems, operating at either steady or unsteady conditions. Second law of thermodynamics is applied to assessing the efficiency of devices and systems. Offered every term. *Prereq: MATH 1451 or MATH 1455; PHYS 1003 or PHYS 1013*

MEEN 3320. Fluid Mechanics 3 sem. hrs.

Fundamental conservation laws of mass, momentum and energy as applied to fluid systems. Properties of fluids, hydrostatics, flow of real fluids in closed and open systems, dynamic similarity, dimensional analysis and viscous and inviscid fluid flow. Offered every term. Same as CEEN 3150.

Prereq: MATH 2450 and MEEN 2120 or CEEN 2120 or MEEN 2122 or CEEN 2122.

MEEN 3330. Fundamentals of Heat Transfer 3 sem. hrs.

Overview of principal mechanisms of heat transfer: conduction, convection, and thermal radiation. Application of conduction and forced convection to heat exchangers. Discussion of theory and applications of conduction, forced and natural convection, boiling and condensation and thermal radiation. Offered spring term.

Prereq: MATH 2451, MEEN 3310, and MEEN 3320.

MEEN 3340. Thermodynamics 2 3 sem. hrs.

This course is the culmination of thermodynamic, fluid and heat transfer concepts to the application of power and refrigeration cycles, psychrometrics systems, and combustion processes. Course includes a laboratory section in which experiments are conducted to demonstrate, test, and assess devices, processes and cycles. Offered fall term - 2 hrs. lec.; 2 hrs. lab. *Prereq: MEEN 3310 and MEEN 3330.*

MEEN 3443. Manufacturing Engineering

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 2460.*

MEEN 3460. 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. 2 hrs. lec.; 2 hrs. lab. *Prereq: MEEN 2460.*

MEEN 3991. 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 3991, 3992, etc. Offered every term. Fee. SNC/UNC grade assessment.

MEEN 3992. 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 3993. 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 3991, 3992, etc. Offered every term. Fee. SNC/UNC grade assessment.

MEEN 3994. 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 4220. Intermediate Dynamics

3 sem. hrs.

Develop an understanding of the principles of 3D rigid body kinematics (motion) and kinetics (forces and accelerations). Use these principles to analyze the dynamic behavior of mechanical systems. Learn to use analytical mechanics tools including virtual work and Lagrange's method. Develop a systematic approach for solving engineering problems. *Prereq: MEEN 2120*

MEEN 4230. Intermediate Mechanics of Materials

3 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.

Prereq: CEEN 2130 or MEEN 2130.

MEEN 4240. Polymers and Polymer Composites

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.

Prereq: CEEN 2130 or MEEN 2130.

MEEN 4245. Fatigue and Fracture Mechanics

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. *Prereq: CEEN 2130 or MEEN 2130.*

MEEN 4250. Design of Machine Elements 2

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.

Prereq: MEEN 3250 or equiv.

MEEN 4265. Intermediate Finite Element Methods

3 sem. hrs.

Application of finite element method (FEM) to static and dynamic mechanical systems. Introduction to commercially available FEM programs.

Prereq: MEEN 3260.

MEEN 4270. Physical Systems Modeling

3 sem. hrs.

Principles of modeling of physical systems, including devices and processes. Development of models of physical systems: mechanical, electrical, fluid, thermal and coupled systems. Time-dependent behavior of interconnected devices and processes. Computer-based modeling and simulation of physical systems. Identification using models and measured data. Introduction to control systems analysis and design. *Prereq: MATH 2451.*

MEEN 4275. Mechatronics

3 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 microcomputer/microcontroller, discrete and continuous controller design, and real-time programming for control.

Prereq: MEEN 3270 and MEEN 3220.

MEEN 4310. Internal Combustion Engines

3 sem. hrs.

Fundamentals of design and operation of internal combustion engines and how these affect performance, fuel requirements, and environmental impact. Study of fluid flow, thermodynamics, combustion, heat transfer and friction phenomena, and fuel properties relevant to engine power, efficiency

and emissions. Examination of spark-ignition, diesel, stratified charge, HCCI and mixed-cycle engines.

Prereq: MEEN 3340.

MEEN 4320. Intermediate Fluid Mechanics

3 sem. hrs.

Development of the equations which govern inviscid and viscous fluids. Potential flow with applications to aerofoil theory. Compressible flow, flow through converging/diverging nozzles, calculation of shocks and thrust. Development of Navier-Stokes equations with analytical and numerical solution techniques. An introduction to Boundary layer theory and simple closed form solutions. *Prereq: MEEN 3340; computer programming experience recommended.*

MEEN 4330. Optics, Lasers and Spectroscopy in Engineering

3 sem. hrs.

Topical overview on the uses of optics, lasers, and spectroscopic measurement techniques in engineering and scientific disciplines. Technical content includes basic principles of geometric optics, principles behind and characteristics of laser operation, and linear spectroscopy. Emphasis on absorption and emission techniques for sensor development. *Prereq: PHYS 1004 or PHYS 1014.*

MEEN 4350. Transport Phenomena

3 sem. hrs.

The subject of transport phenomena includes three closely related topics: fluid dynamics, mass transfer, and heat transfer. Fluid dynamics involves the transport of momentum, mass transfer is concerned with the transport of mass of various chemical species, and heat transfer deals with the transport of energy. In practice, rarely are these phenomena acting alone. Thus in this introductory course, these three topics are studied together so that a more cohesive understanding of these interrelated processes is developed. *Prereq: MEEN 3340.*

MEEN 4360. Intermediate Thermodynamics

3 sem. hrs.

This intermediate course will cover fundamentals of thermodynamics, including classical and statistical approaches with application to equilibrium and non-equilibrium, non-reactive and reactive systems. Topics relevant to micro/nanoscale and biological systems may be covered. *Prereq: MEEN 3340.*

MEEN 4410. Experimental Design

3 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. *Prereq: MATH 4720, MEEN 2426, or cons. of instr.*

MEEN 4420. 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. *Prereq: MEEN 3460 and CEEN 2130 or MEEN 2130.*

MEEN 4430. Powder Metallurgy

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. *Prereq: MEEN 2460.*

MEEN 4440. 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.
Prereq: MEEN 2460.

MEEN 4450. 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. *Prereq: MEEN 3460 and CEEN 2130 or MEEN 2130; or cons. of instr.*

MEEN 4470. 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 1120 or equiv., GEEN 1130 or equiv., and MEEN 2426 or equiv.*

MEEN 4475. Ergonomics 3 sem. hrs. Ergonomics maximizes the health and safety of workers, while maintaining productivity and quality. This course covers biomechanical and physiologic aspects of workplace design, such as engineering anthropometry, cumulative trauma disorders, (including carpal tunnel syndrome), low back injuries, hand tool design and evaluation, methods of surveillance in industrial environments, modeling, and ergonomics guidelines. Laboratory sessions are offered to demonstrate ergonomic principles and also provide students with hands-on experience in collecting data and conducting experiments. Offered fall term. 2 hrs. lec., 2 hrs. lab. *Prereq: GEEN 1120 or equiv.; and MEEN 2426 or equiv.*

MEEN 4480. Metal Forming 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. *Prereq: CEEN 2130 or MEEN 2130; and MEEN 3443.*

MEEN 4485. 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, demonstrations using various processes. *Prereq: CEEN 2130 or MEEN 2130; and MEEN 3443.*

MEEN 4570. 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. Same as BIEN 4420. *Prereq: MEEN 2460.*

MEEN 4590. Engineering Fundamentals Review 1 sem. hr. Review of basic science, mathematics, engineering science, and economics. Offered fall term. S/U grade assessment. *Prereq: Sr. stndg. Same as CEEN 4710.*

MEEN 4920. 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. discussion. *Prereq: Sr. stndg; Co-op students, Jr. stndg. Cross-listed with BIEN 4920, COEN 4920, EECE 4920.*

MEEN 4931. Topics in Mechanical Engineering 3 sem. hrs. Covers a unique perspective or in-depth topic in: energy conversion, mechanical analysis and design and manufacturing systems.

MEEN 4991. Co-op Work Period 3 0 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 4991, 4992, etc. Offered every term. Fee. SNC/UNC grade assessment.

MEEN 4992. 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 4993. 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 4991, 4992, etc. Offered every term. Fee. SNC/UNC grade assessment.

MEEN 4994. 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 4995. Independent Study in Mechanical Engineering 1-3 sem. hrs. Undergraduate independent study project of either theoretical or experimental nature. *Prereq: Jr. stndg., 3.000 GPA, cons. of instr., and cons. of dept. ch.*

MEEN 4998. 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. discussion. *Prereq: MEEN 4920. Cross-listed with BIEN 4998, COEN 4998, and EECE 4998.*

MEEN 5310. Internal Combustion Engines 3 sem. hrs. Fundamentals of design and operation of internal combustion engines and how these affect performance, fuel requirements, and environmental impact. Study of fluid flow, thermodynamics, combustion, heat transfer and friction phenomena, and fuel properties relevant to engine power, efficiency and emissions. Examination of spark-ignition, diesel, stratified charge, HCCI and mixed-cycle engines.

SPECIAL PROGRAM

ENGINEERING ETHICS AND VALUES

ENEV 1952. Ethics and Values Colloquium 1 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 three to four times during the term. S/U grade assessment.

ENEV 2952. Ethics and Values Colloquium 2 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 three to four times during the term. S/U grade assessment.

ENEV 3952. Ethics and Values Colloquium 3 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 three to four times during the term. S/U grade assessment.

ENEV 4952. Ethics and Values Colloquium 4 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 three to four times during the term. S/U grade assessment.

ENEV 4995. Independent Study 1-4 sem. hrs. Undergraduate independent study project of either a theoretical or experimental nature. Offered every term. *Prereq: Jr. stndg, 3.000 GPA, cons. of instr., and cons. of dept. ch.*

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. Biomedical sciences faculty participates in the doctoral specialization in neuroscience through the biological sciences graduate program. Details for these programs can be found in the *Graduate Bulletin*.

The college also offers a professional doctoral program in physical therapy and a master's of 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. Students majoring in any of the majors offered by the College of Health Sciences must be a resident in the college to complete the major and earn the corresponding degree.

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 1001, 2120, and 1100.

Requirements for a **biomedical sciences** minor are 18 credits selected from the following BISC 1060, 2070, 3110, 3112, 3213, 3115, 4120, 2125, 4130, 2135, 4140, 2150, 4145, 3150, 4160, 4165, 2173, 4995, 4931 and CLLS 1010. 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, seminars and recommendations to help you with the professional school application process.

Course requirements may vary among institutions and across disciplines. Students should consult graduate and professional schools of interest to identify specific course requirements.

Students considering the Doctor of Physical Therapy or Master of Physician Assistant Studies programs must complete prerequisite courses at an accredited four-year educational institution.

PRE-DENTAL SCHOLARS PROGRAM

The 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 enrolled in the College of Health Sciences pursue a major in biomedical sciences and complete the undergraduate portion of their studies in three years. The first three years of the pre-dental scholar program, students will 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

- Academic Standards** of the Pre-Dental Scholars Program require that you:
 - Have a cumulative 3.500 grade point average at the end of each semester in the program.
 - Receive a grade of no less than a B or better in all science or math courses.
 - Complete a typical course load of 15-18 credit hours per semester.
 - Under no circumstances will a student in this program be admitted to the School of Dentistry before completing six semesters of full-time course work at Marquette University.
 - May not repeat any math or science courses.
 - AP coursework in any science or math will not satisfy prerequisite requirements.
- Failure to meet the Academic Requirements** in any semester will result in you being placed on probation beginning the following semester. Courses taken in the probationary semester must be approved in writing by your academic advisor. If, at the end of this probationary semester, you have not brought your cumulative grade point back up to a 3.500 and/or have received less than a B grade in any science or math course, you will be withdrawn from the program. If you have returned to the academic standards by the end of the probationary semester, you will be returned to good standing in the program.
 - During this probationary semester, you must complete a typical 15-18 credit course load and may not withdraw from any course(s).
 - A second probationary semester will not be permitted and will result in withdrawal from the Program.
 - Failure to meet the academic standards during the spring semester of the junior year will result in withdrawal from the program and will impact your admission to the Marquette University School of Dentistry.
- Appeals:** Your appeal to any decision must be made to the Pre-Dental Scholars Committee in writing and should elaborate on any personal or medical circumstances that affect your academic performance. Any appeal related to grades or classroom performance, however, must be taken up with the faculty involved or through the use of his/her department's grade appeal procedures.
- University Probation:** Behaviors and/or activities that lead to University Probation may result in removal from the program and impact admission to the Marquette University School of Dentistry. Such activities include Academic Dishonesty or any activity deemed inappropriate, unethical, or illegal.
- Academic Dishonesty:** Any activity deemed inappropriate, unethical, or illegal, regardless of whether that behavior leads to University Probation, may result in removal from the program and impact admission to the Marquette University School of Dentistry.

6. **Summer Coursework:** All Science and math courses must be taken at Marquette University unless your academic advisor agrees, in writing and in advance, that circumstances warrant that courses may be taken elsewhere. Science or math courses taken at junior, community, two-year, or technical schools are not acceptable and will not satisfy the science and math requirements of this program. Courses in the humanities are not subject to the above restriction, but you must have approval for these courses from your college advisor.
7. **Dental Aptitude Test (DAT):** The DAT may be taken as early as the spring semester of the sophomore year but no later than the fall semester of the junior year.
8. **Financial Aid:** 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.

Withdrawal from this program, whether voluntary or otherwise, does not necessarily compromise your ability to apply to the Marquette Dental School through normal application procedures, providing that you are competitive with other applicants.

GRADUATION REQUIREMENTS

AMOUNT AND QUALITY OF WORK

Candidates for a degree must earn the required number of credits for their major and a minimum number of quality points equal to twice the number of credit hours attempted at Marquette (C average). Students may earn credits but not quality points from another institution. All students must earn at least a C average in their Marquette work.

A student must earn a C or better in all the courses in their major. Courses completed with a grade of CD or D do not count toward the total hour requirement for a major or minor but do count toward the total number of credit hours for graduation. Students who receive a grade of CD or D in a course in their major or minor may choose to repeat the course and for certain majors, are required to repeat the course or otherwise establish proficiency in a manner designated by the department. Credit is never given twice for the same course. Students must consult the area of the bulletin of their chosen major and minor for specific graduation requirements.

Students must fulfill the University Core of Common Studies, college and major curriculum requirements and take elective courses within the number of credits required for graduation. Certain combinations of major and minor fields may require more than the minimum number of credits for graduation. Students should consult an adviser before selecting a major and an optional minor.

Applicants for graduation must submit an application to the college dean's office by the last day of advising week in the term prior to the term of graduation. (November for May and August graduates; March for December graduates.)

It is the responsibility of the student to know and fulfill all University Core of Common Studies, College of Health Sciences and major requirements.

ACADEMIC REGULATIONS

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 must maintain a cumulative grade point average of at least 2.000. A term GPA falling below 2.000 or insufficient progress toward degree completion in a semester may result in the student being placed on probation. All students on probation will be reviewed and subject to academic dismissal if the terms of probation are not met. Specific majors may have more stringent term and cumulative GPA requirements. Students must consult the area of the bulletin of their chosen major for major-specific academic regulations.

Students in the professional phase of the Doctoral of Physical Therapy or Master of Physician Assistant Studies programs **must** comply with the academic regulations listed in the *Physical Therapy and Physician Assistant Student Handbook*. The *Physical Therapy and Physician Assistant Student Handbook* is issued to students upon entering the professional phase of the curriculum.

ADVISERS

Upon enrollment in the College of Health Sciences each student is assigned an adviser. The adviser will assist the student with course selection, sequencing of courses, academic matters related to their curriculum and career advising. It is the student's responsibility to monitor his/her own progress toward degree requirements.

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.

CR/NC OPTION

For enrichment purposes, junior and senior students are given an option to elect one course per term (to a maximum of four courses) for which only a CR (credit) or NC (no-credit) is assigned.

Eligible courses include only true electives in the individual's program selected from offerings by other divisions of the university. Courses excluded are all those taken in fulfillment of the requirements of the core curriculum and all offerings in their specific major or minor.

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. Each professor in the College of Health Sciences sets the attendance policy in her/his classes and provides it at the start of the semester in the course syllabus. It is the responsibility of each student to follow the attendance policy for the courses in which they are enrolled. College of Health Sciences course professors may submit a grade of WA after a student has been informed verbally about absences and the attendance policy but continues to miss classes. Refer to the University Attendance Policy in the front section of this bulletin for further details on attendance and absence procedures.

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 (4995/7995) may be taken in the College of Health Sciences. The purpose of these courses is to provide an independent, guided study experience for qualified students. A student must be in good academic standing in the College of Health Sciences. The purpose of an independent study course is to allow the student to pursue topics and issues in a course and/or a legitimate course of study for which no regularly scheduled course is offered. Permission and approval is contingent on the approval of the research proposal, the faculty's willingness to accept the proposal and to work with the student for the duration of the course. All independent study courses must have written approval from the instructor, department chairperson and assistant dean.

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. 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. No level of appeal is available beyond the Dean.

TRANSFER CREDIT POLICY

The College of Health Sciences will grant credit for courses taken for a grade and completed with a C or better. Only credit will transfer, not grades. Courses completed on a quarter-hour system will be converted to semester credits, therefore reducing the total credits accepted. A Marquette equivalent will be specified for each transferable course. Courses awarded as 9290-9294 (lower division) or 9390-9399 (upper division) indicate courses that will transfer for which there is no discernible Marquette equivalent. These credits will count toward the degree however, they will not fulfill any requirement where a specific course number (i.e. ENGL 1001 or BISC 1015) 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 STUDENT 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 a coordinating instrument of professional and social activities for all students in the College of Health Sciences. Its purpose is to stimulate a professional attitude among health sciences students; to promote cooperation and understanding among health sciences students as well as with the faculty and administration; and an awareness and promotion of health education in the community.

CLINICAL LABORATORY SCIENCE

In addition to the university student organizations, clinical laboratory science students are eligible for membership in the Clinical Laboratory Science Student Council 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 required to become student members in the American Physical Therapy Association during the professional phase of the program.

PHYSICIAN ASSISTANT STUDIES

The Student Association of the American Academy of Physician Assistants has awarded a charter membership to the Department of Physician Assistant Studies at Marquette University. All students in the program participate. The organization coordinates 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 (MU-NSSLHA) is comprised of undergraduate and graduate students interested in the professions of Speech-Language Pathology and Audiology. The organization hosts guest speakers from the professional community, interacts with other student groups and is active in community and charitable organizations.

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 and offers graduate courses for the Ph.D. specialization in neuroscience. 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 Requirements | 36-39 |
| Required Science Cognates | 17-25 |
| Required Health and Society Cognates | 4-6 |
| Major | 30 |

Core and Department Curriculum Requirements:

Diverse Cultures (DC) **3 credits**

Any course approved for the university core in this area

Histories of Cultures and Societies (HCS) **6 credits**

One course approved for the university core in this area and one history elective

Human Nature and Ethics (HNE) **6 credits**

PHIL 1001, PHIL 2310

Individual and Social Behavior (ISB) **3 credits**

PSYC 1001

Literature and Performing Arts (LPA) **3 credits**

Any literature course approved for the university core in this area (excludes ARSC 2970, COMM 2100, MUSI 1020, MUSI 2420, THAR 1020 and other non-literature LPA courses)

Mathematical Reasoning (MR) **3 credits**

Any statistics course approved for the university core

Rhetoric (R) **6 credits**

Any courses approved for the university core in this area*

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 1001 and another course approved for the university core in this area

*ENGL 1001 and ENGL 1002 are recommended for pre-professional students

▲ Indicates UCCS courses in course descriptions.

Required Science Cognates:

All students are required to take BIOL 1001, BIOL 1002, CHEM 1001, CHEM 1002, organic chemistry (either CHEM 2111 and CHEM 2112 or BISC 2050), and one of the following laboratory science courses: BIOL 2001, CLLS 1010, CLLS 3160, PHTH 7525, or BISC 4165. Students who are interested in pursuing a professional or graduate education should take the following courses: CHEM 2111, CHEM 2112, PHYS 1001, PHYS 1002, BIOL 2001, MATH 1410.

Required Health and Society Cognates:

All students are required to take a minimum of one credit in medical ethics (PHIL 4335, PHIL 4336 or THEO 4450/5450) Students are also required to take one of the following courses related to health and society: BISC 2150*, HEAL 2100, POSC 6956, PSYC 3420, SOCI 2300, SOCI 4300, SOCI 3520, SOCI 3500, SOCI 3550, SOCI 3570, or SOWJ 1001. Special topics (4930) and topics (4931) courses that relate to health and society may be approved on an individual basis.

*NOTE: BISC 2150 can be taken for the Health and Society Cognate requirement OR as a BISC elective, but it cannot be used to fulfill both requirements.

Major Requirements:

The following courses are required: BISC 1001 (new freshman only), BISC 2135 or BISC 4130, BISC4145, BISC 3115, BISC 4120, BISC 3150, BISC 4160 and biochemistry (either BISC 3213, BISC 2070, or BIOL 4101).

Additional courses must be selected from the following list to reach a total of 30 credits: BISC 1030, BISC 4986, BISC 3110, BISC 3112, BISC 2125, BISC 2136, BISC 4140, BISC 2150*, BISC 4165, BISC 2173, BISC 4995, BISC 4931, BIOL 3102, BIOL 2201, BIOL 3202, BIOL 2301, BIOL 3302, BIOL 3501, BIOL 3502, BIOL 3702, BIOL 4806, CLLS 2050, CLLS 2060, CLLS 3160, PHTH 7558, PHTH 7515/6515. A maximum of nine transfer credit hours can be applied toward the requirements for a major.

*NOTE: BISC 2150 can be taken for the Health and Society Cognate requirement OR as a BISC elective, but it cannot be used to fulfill both requirements.

Minor Requirements:

For a biomedical sciences minor, 18 credits are required from the following list: BISC 1060, BISC 2070, BISC 1030, BISC 3110, BISC 3112, BISC 3213, BISC 3115, BISC 4120, BISC 2125, BISC 4130 (PA and PT students only), BISC 2135, BISC 4140, BISC 2150, BISC 4145, BISC 3150, BISC 4160, BISC 4165, BISC 2173, BISC 4995, BISC 4931, CLLS 1010. A maximum of nine transfer credit hours can be applied toward the requirements for a minor.

ACADEMIC PERFORMANCE

All students must comply with the College of Health Sciences graduation requirements. Candidates for a degree must earn at least the minimum number of credits listed in their curriculum and a minimum GPA of 2.000. A student must earn a C or better in all major courses. Major courses completed with a CD or less do not count toward the total hour requirement for the major or minor but do count toward the total number of credit hours for graduation. A waiver request may be submitted by a student if a required BISC course taken in the senior year is completed with a CD or D grade, provided the student has completed at least 30 credits in the major with a C or better.

CURRICULA INFORMATION*TYPICAL PROGRAM FOR BIOMEDICAL SCIENCES MAJOR*

| <i>Freshman</i> | | | |
|---|-----------|--------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| ENGL 1001 (R) | 3 | ENGL 1002*/COMM 1100 (R) | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| BIOL 1001 (SN) | 3 | BIOL 1002 | 3 |
| THEO 1001 (T) | 3 | PSYC 1001 (ISB) | 3 |
| UCCS (HCS) | 3 | History elective | 3 |
| BISC 1001 | 1 | | |
| | 17 | | 16 |
| <i>Sophomore</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| BIOL 2001*/Lab Course**** | 1-3 | CHEM 2112*/BISC 2070** | 4/3 |
| CHEM 2111*/BISC 2050 | 4/2 | PHIL 2310 (HNE) | 3 |
| BISC 2135 | 4 | Statistics (MR) | 3 |
| PHIL 1001 (HNE) | 3 | Electives | 6-9 |
| MATH 1410*/elective | 3 | | |
| | 13-17 | | 15-18 |
| <i>Junior</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| PHYS 1001*/elective | 4/3 | PHYS 1002*/elective | 4/3 |
| BISC 3115 | 3 | BISC 4145 | 4 |
| BISC 3213*/elective | 4/3 | BISC 3150 | 3 |
| Health and Society Requirement*** | 3 | Literature (LPA) | 3 |
| Elective | 3 | Electives | 3-6 |
| | 15-17 | | 14-17 |
| <i>Senior</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| PHIL 4336 | 1 | BISC 4120 | 3 |
| UCCS (DC) | 3 | BISC Elective | 3 |
| BISC Elective | 3 | UCCS (T) | 3 |
| BISC 4160 | 3 | Electives | 7 |
| Elective | 3-6 | | |
| | 13-16 | | 16 |

* Courses required for many post-graduate/professional programs

** The biochemistry requirement can be satisfied by either BISC 2070 or BIOL 4101 in the sophomore year or BISC 3213 in the junior year

*** BISC 2150, HEAL 2100, POSC 6956, PSYC 3420, SOCI 2300, SOCI 4300, SOCI 3520, SOCI 3500, SOCI 3550, SOCI 3570, or SOWJ 1001. Special topics (4930) and topics (4931) courses that relate to health and society may be approved on an individual basis.

**** The laboratory course requirement can be satisfied by either BIOL 2001, BISC 4165, CLLS 1010, CLLS 3160 or PHTH 7525/6525.

BIOMEDICAL SCIENCES MAJOR CURRICULUM FOR PRE-PA STUDENTS**Freshman**

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------|-----------|-------------------------------|-----------|
| ENGL 1001 (R) | 3 | ENGL 1002/COMM 1100 (R) | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| BIOL 1001 (SN) | 3 | BIOL 1002 | 3 |
| UCCS (HCS) | 3 | History elective | 3 |
| THEO 1001 (T) | 3 | PSYC 1001 (ISB) | 3 |
| BISC 1001 | 1 | | |
| | 17 | | 16 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------------|-----------|-----------------------|-----------|
| Literature (LPA) | 3 | Elective | 3 |
| CHEM 2111 | 4 | CHEM 2112 | 4 |
| PHIL 1001 (HNE) | 3 | PHIL 2310 (HNE) | 3 |
| BISC 2125 | 4 | UCCS (T) | 3 |
| Health and Society Requirement* | 3 | Statistics (MR) | 3 |
| | 17 | | 16 |

BISC 2150, HEAL 2100, POSC 6956, PSYC 3420, SOCI 2300, SOCI 4300, SOCI 3520, SOCI 3500, SOCI 3550, SOCI 3570, or SOWJ 1001. Special topics (4930) and topics (4931) courses that relate to health and society may be approved on an individual basis.

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|-----------------|-----------|
| BISC 3213 | 4 | BISC 4145 | 4 |
| BISC 4130 | 5 | BISC 4140 | 3 |
| BISC 3110 | 3 | BISC 3150 | 3 |
| PHIL 4336 | 1 | BISC 7410 | 4 |
| PHAS 7040 | 1 | BISC 4165 | 1 |
| BISC 4160 | 3 | PHAS 7117 | 3 |
| | 17 | | 18 |

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 1001 (SN) | 3 | BIOL 1002 | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| ENGL 1001 (R) | 3 | ENGL 1002/COMM 1100 (R) | 3 |
| THEO 1001 (T) | 3 | PSYC 1001 (ISB) | 3 |
| Elective | 3 | Elective | 3 |
| BISC 1001 | 1 | | |
| | 17 | | 16 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|--------------------------|-----------|
| BISC 2050 | 2 | BISC 2070 | 3 |
| UCCS (HCS) | 3 | History elective | 3 |
| PHIL 1001 (HNE) | 3 | PHTH 1001* | 1 |
| Literature (LPA) | 3 | Statistics*** (MR) | 3 |
| Electives | 3-6 | PHIL 2310 (HNE) | 3 |
| | | Elective | 3 |
| | 14-17 | | 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------|-----------|--|-----------|
| PHYS 1001 | 4 | PHYS 1002 | 4 |
| Elective | 3 | BISC 4145 | 4 |
| BISC 3115 | 3 | BISC 3150 | 3 |
| UCCS (T) | 3 | Health and Society Requirement** | 3 |
| BISC elective | 1-3 | PHIL 4336 | 1 |
| | 14-17 | | 15 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------|-----------|-----------------|-----------|
| PHTH 7512 (DC) | 3 | PHTH 7530 | 2 |
| BISC 4130 | 5 | PHTH 7528 | 2 |
| PHTH 7503 | 3 | PHTH 7515 | 4 |
| PHTH 7513 | 3 | PHTH 7525 | 3 |
| BISC 4160 | 3 | BISC 4120 | 3 |
| | 17 | | 14 |

*Students who are not direct admit PT students are not required to complete PHTH 1001

** BISC 2150, HEAL 2100, POSC 6956, PSYC 3420, SOCI 2300, SOCI 4300, SOCI 3520, SOCI 3500, SOCI 3550, SOCI 3570, or SOWJ 1001. Special topics (4930) and topics (4931) courses that relate to health and society may be approved on an individual basis.

***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 1001 (R) | 3 | ENGL 1002 (R) | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| BIOL 1001 (SN) | 3 | BIOL 1002 | 3 |
| UCCS (HCS) | 3 | History elective | 3 |
| THEO 1001 (T) | 3 | PSYC 1001 (ISB) | 3 |
| BISC 1001 | 1 | BISC 1030 | 1 |
| | 17 | | 17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------|-----------|---------------------------|-----------|
| CHEM 2111 | 4 | CHEM 2112 | 4 |
| PHIL 1001 (HNE) | 3 | PHIL 2310 (HNE) | 3 |
| MATH 1410 | 3 | BISC 2070 | 3 |
| BIOL 2001 | 3 | BISC 4145 | 4 |
| Elective | 3 | Elective | 3 |
| | 16 | | 17 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|-----------------------------|-----------|
| PHIL 4336 | 1 | BISC 4120 | 3 |
| Health and Society Requirement* | 3 | UCCS (T) | 3 |
| Literature (LPA) | 3 | BISC 3150 | 3 |
| BISC 4160 | 3 | Statistics** (MR) | 3 |
| PHYS 1001 | 4 | PHYS 1002 | 4 |
| UCCS (DC) | 3 | | |
| | 17 | | 16 |

Year One - Dental Curriculum

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------------------|-----------|-------------------------------|-----------|
| BISC 7513 | 4 | BISC 7410 | 4 |
| BISC 7514 | 4 | BISC 7515/7516 | 6 |
| Clinical curriculum | TBD | Clinical curriculum | TBD |

Years Two through Four — Dental Curriculum**Clinical Curriculum TBD**

* BISC 2150, HEAL 2100, POSC 6956, PSYC 3420, SOCI 2300, SOCI 4300, SOCI 3520, SOCI 3500, SOCI 3550, SOCI 3570 or SOWJ 1001. Special topics (4930) and topics (4931) courses that relate to health and society may be approved on an individual basis.

**Any statistics course approved for math requirement of 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; 5600 N. River Road, Suite 720; Rosemont, IL 60631; (773) 714-8880. Upon successful completion of the course work, students are eligible for the appropriate certification and/or licensure examinations. The university assumes no responsibility for the success of its students in obtaining professional certification or other types of professional licensure.

ADMISSION REQUIREMENTS

Applicants to the Department of Clinical Laboratory Science are expected to fulfill the university admission requirements. In addition to these, they must have had two laboratory sciences, one of which must be chemistry. Three years of advanced high school mathematics and high school physics are recommended. Marquette University accepts freshman students for August and January enrollment, but students enrolling in clinical laboratory science are urged to begin college in the fall because of scheduling difficulties inherent in mid-year admission.

Certain essential functions represent the non-academic requirements of the program that a student must possess to successfully complete the program and become employable. These include the ability to distinguish colors, the ability to learn to perform and interpret highly complex testing methods, the ability to disseminate information in an accurate and confidential manner and the ability to become a competent phlebotomist. Students must have good tactile skills, possess adequate physical and emotional health to work under stress and demonstrate respect and care for others.

ADMISSION WITH ADVANCED STANDING AND TRANSFER WITHIN THE UNIVERSITY

For students applying for admission with advanced standing from another institution or as transfers from within the university, the general university regulations apply.

Ordinarily, the following courses are not accepted from other institutions: CLLS 1010, CLLS 3124, CLLS 3127, CLLS 3140, CLLS 3173 and CLLS 3174.

Due to the nature of the content of BISC 2070, BISC 3213, CLLS 3124 and CLLS 3127, 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, CLLS 3124, CLLS 3127, CLLS 3140, CLLS 3173 and CLLS 3174 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 Core of Common Studies (UCCS) curriculum is included in the Clinical Laboratory Science (CLS) Core Curriculum requirements.

Core and Department Curriculum Requirements:

| | |
|--|-------------------|
| Rhetoric (R) | .6 credits |
| Any courses approved for the university core in this area* | |
| Mathematical Reasoning (MR) | .3 credits |
| MATH 1700 | |
| 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 1001 | |
| Human Nature and Ethics (HNE) | .7 credits |
| PHIL 1001, PHIL 2310, PHIL 4336 or other medical ethics course | |
| Theology (T) | .6 credits |
| THEO 1001 and another course approved for the university core in this area | |

*ENGL 1001 and ENGL 1002 are recommended for pre-professional students.

Requirements for a CLS Major

The following courses constitute the Clinical Laboratory Science major:

Required Cognates:

BIOL 1002 General Biology (3 credits)
BISC 2070 (3 credits) or BISC 3213 (4 credits)
BISC 1015 (5 credits) or BISC 4145 (4 credits)

CHEM 1001 General Chemistry (4 credits)
CHEM 1002 General Chemistry (4 credits)
CHEM 2111 Organic Chemistry (4 credits)

Major Course Requirements:

CLLS 1010 Concepts in Clinical Lab (3 credits)
CLLS 3124 Medical Bacteriology (4 credits)
CLLS 3127 Medical Microbiology (4 credits)
CLLS 3140 Laboratory Instrumentation (3 credits)
CLLS 3160 Molecular Diagnostics: Laboratory Techniques (3 credits)
CLLS 3173 Analytical and Clinical Chemistry (4 credits)
CLLS 3174 Clinical Hematology (4 credits)
CLLS 4180 Basic Concepts in Clinical Education Methods and Practicum (1 credit)
CLLS 4181 Modern Management Concepts for the Clinical Laboratory and Practicum (1 credit)
CLLS 4183 Clinical Chemistry and Practicum (6 credits)
CLLS 4184 Clinical Hematology and Practicum (4 credits)
CLLS 4185 Clinical Hemostasis and Practicum (3 credits)
CLLS 4186 Clinical Immunohematology and Practicum (6 credits)
CLLS 4187 Clinical Immunology and Serology and Practicum (2 credits)
CLLS 4188 Clinical Microbiology and Practicum (6 credits)
CLLS 4189 Clinical Urinology and Practicum (2 credits)

Electives 12 credits

Students may choose from any university offerings to earn a total of 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 1001 ¹ (SN) | 3 | BIOL 1002 ² | 3 |
| CHEM 1001 | 4 | CHEM 1002..... | 4 |
| CLLS 1100..... | 0 | ENGL 1002 or COMM 1100 (R)..... | 3 |
| ENGL 1001 (R)..... | 3 | MATH 1700 (MR) | 3 |
| UCCS (ISB) | 3 | Elective | 3 |
| Elective | 3 | | |
| | 16 | | 16 |

| <i>Sophomore</i> | | | |
|------------------------------|-----------|------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| CHEM 2111 | 4 | BISC 2070 ² | 3 |
| CLLS 1010 ¹ | 3 | BISC 1015 ² | 5 |
| UCCS (HCS) | 3 | UCCS (LPA)..... | 3 |
| PHIL 1001 (HNE) | 3 | PHIL 2310 (HNE) | 3 |
| THEO 1001 (T)..... | 3 | | |
| | 16 | | 14 |

| <i>Junior</i> | | | |
|------------------------------|-----------|--------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| CLLS 3124 ¹ | 4 | CLLS 3127 ^{2,3} | 4 |
| CLLS 3160 ¹ | 3 | CLLS 3140 ^{2,3} | 3 |
| UCCS (DC)..... | 3 | CLLS 3174 ^{2,3} | 4 |
| UCCS (T) | 3 | PHIL 4336 | 1 |
| Elective | 3 | Elective | 3 |
| | 16 | | 15 |

Summer Session Between Junior and Senior Year

CLLS 3173.....4

| <i>Senior⁴</i> | | | |
|---------------------------|---|-----------------|----|
| CLLS 4180..... | 1 | CLLS 4186 | 6 |
| CLLS 4181..... | 1 | CLLS 4187 | 2 |
| CLLS 4183..... | 6 | CLLS 4188..... | 6 |
| CLLS 4184..... | 4 | CLLS 4189..... | 2 |
| CLLS 4185..... | 3 | | |
| | | | 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

| <i>Freshman</i> | | | |
|--|-----------|--------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| BIOL 1001 ¹ (SN) | 3 | BIOL 1002 ² | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| CLLS 1100 | 0 | ENGL 1002 (R) | 3 |
| UCCS (DC) | 3 | UCCS (ISB) | 3 |
| ENGL 1001 (R) | 3 | MATH 1700 (MR) | 3 |
| UCCS (HCS) | 3 | | |
| | 16 | | 16 |
| <i>Sophomore</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| CHEM 2111 | 4 | BIOL 2001 or Elective | 3 |
| CLLS 1010 ¹ | 3 | CHEM 2112 | 4 |
| PHIL 1001 (HNE) | 3 | UCCS (LPA) | 3 |
| PHYS 1001 | 4 | PHYS 1002 | 4 |
| THEO 1001 (T) | 3 | PHIL 2310 (HNE) | 3 |
| | 17 | | 17 |
| <i>Junior</i> | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| BISC 3213 ¹ | 4 | BISC 4145 | 4 |
| CLLS 3124 ¹ | 4 | CLLS 3127 ^{2,3} | 4 |
| CLLS 3160 ¹ | 3 | CLLS 3140 ^{2,3} | 3 |
| PHIL 4336 | 1 | CLLS 3174 ^{2,3} | 4 |
| UCCS (T) | 3 | | |
| | 15 | | 15 |
| <i>Summer Session Between Junior and Senior Year</i> | | | |
| CLLS 3173 | 4 | | |
| <i>Senior⁴</i> | | | |
| CLLS 4180 | 1 | CLLS 4186 | 6 |
| CLLS 4181 | 1 | CLLS 4187 | 2 |
| CLLS 4183 | 6 | CLLS 4188 | 6 |
| CLLS 4184 | 4 | CLLS 4189 | 2 |
| CLLS 4185 | 3 | | |
| | 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.

GENERAL DEGREE REGULATIONS

ACADEMIC REGULATIONS

Students in the Department of Clinical Laboratory Science are expected to comply with the academic requirements and regulations listed in the University section of this bulletin. Amplifications and additions to these requirements are detailed herein and govern only those students enrolled in the Department of Clinical Laboratory Science. Course requirements and regulations are subject to change on an annual basis and depend upon the demands of the profession. Students are subject to these changes regardless of the date of their matriculation in the major.

RESIDENCY REQUIREMENT

Clinical laboratory science students must spend the term immediately preceding the senior year in residency (attend as a full-time student). Ordinarily this is the second term of the junior year during which the student must take CLLS 3127, CLLS 3140, and CLLS 3174.

PROFESSIONAL REGULATIONS

In addition to being evaluated through the use of written examinations and assignments, class participation and practical examinations, clinical laboratory science students are also evaluated with respect to their professional qualities. The instructors in most clinical laboratory science courses complete a written evaluation of each student.

During the senior year students are subject to the rules and regulations of the affiliating unit to which they are assigned.

SCHOLASTIC REGULATIONS

Essential Courses

There are certain cognate courses, the subject matter of which is deemed essential to the understanding of clinical laboratory science course work. Successful completion of subsequent courses is dependent upon the information learned in the prerequisite course(s). Therefore, grades of less than C in these “essential” courses are considered unacceptable to the fulfillment of the requirement. The following courses are included in this regulation: CHEM 1002, BISC 2070 or BISC 3213, BISC 1015 or BISC 4145. Students must also achieve a grade of C or better in all the courses in their major.

To fulfill the degree requirements, major and essential courses (or their equivalent) in which unacceptable grades have been earned must be repeated or the student must demonstrate proficiency in the discipline by some other method as assigned by the promotions committee. Students who complete guided study (CLLS 1100) to establish proficiency are issued a grade of CR. A student will not normally be permitted to repeat more than two of these courses.

JUNIOR AND SENIOR CRITERIA

To be classified as a junior in clinical laboratory science, students must meet the following criteria:

1. Completion of all lower division science, mathematics, and clinical laboratory science courses and at least 30 credit hours of humanities.
2. Attainment of a cumulative grade point average of 2.200 as well as a 2.000 in science, mathematics, and clinical laboratory science courses.

To be classified as a senior in clinical laboratory science, the following criteria must be met:

1. Completion of all requirements through junior year which are in effect for the particular class beginning the senior year regardless of when the student matriculated in the major.
2. Attainment of a cumulative grade point average of 2.200 as well as a grade point average of 2.000 in the required science, mathematics, and clinical laboratory science courses.

Students who fail to meet the criteria for junior and/or senior classification due to serious reasons but whose deficiencies are minimal and who have shown potential for success may appeal. If the promotions committee upon review of the written appeal grant admission with PROBATION status, the student must make up his/her deficiencies. These students do not necessarily participate in the matching process but are accepted by an affiliation through individual negotiation between the university department chair and the affiliation's program director.

ACADEMIC ACTIONS

Students who fail to maintain a C or 2.000 cumulative grade point average are automatically warned on their grade reports. Their grade point average deficiency is calculated along with the grade point required in all future work to achieve the 2.000 required for graduation. For clinical laboratory science students, this action refers only to eligibility to continue at the university, rather than their eligibility to continue in the clinical laboratory science major. For requirements specific to students in clinical laboratory science, refer to the section on Scholastic Regulations.

Students who fail to comply with the rules and regulations of the department with respect to immunizations, health insurance, safety, honesty or whose conduct or health is unsatisfactory may be *required to withdraw*.

Students in the senior year who are in violation of the rules and regulations of the clinical facility are subject to dismissal from that facility. This action is under the jurisdiction of the authorities of that institution in consultation with the university department chair.

Students who fail to maintain progress necessary to meet the minimum requirements because of grade point average or excessive failure (F or U) grades are subject to review by the Academic Standards Committee, and they may be *required to withdraw from the college*.

During the senior year the academic actions taken are varied in severity dependent upon the scholastic and/or professional deficiency. These *actions* are the following: *clinical censure, clinical warning and required to withdraw*. The method of making up unacceptable grades during the

senior year which have resulted in the issuing of an *action of clinical censure or clinical warning* will be determined by mutual agreement between the university department chair and the affiliation clinical program director. The Academic Standards Committee will prescribe, in writing, conditions under which these students will be allowed to continue. Students who do not meet the conditions thus stipulated will be *required to withdraw*.

ATTENDANCE

In addition to the College of Health Sciences Absence Policy, the attendance policy for senior year is stipulated by the rules and regulations of each of the affiliations.

RULES AND REGULATIONS

Employment During the Senior Year

The rigors of the program are such that it is highly recommended that senior students not be employed except on weekends. Eight hours of employment on the weekends are considered to be the maximum that a senior student can be employed.

Immunizations and Health Insurance

Prior to enrollment in the courses in medical microbiology, students are required to have appropriate immunizations and/or have tests to determine immune status. Students are not permitted to begin the senior year until they have presented evidence of adequate health insurance coverage.

Study Abroad

Refer to the University—Academic Programs section of the bulletin.

Clinical laboratory science students qualify for these programs. Usually science courses may not be taken during their studies abroad. Generally, study abroad will require additional time spent at the university beyond the usual four-year sequence.

Special Regulations

Students who withdraw during the senior year, must, if readmitted, repeat the entire senior year. Due to the nature of clinical laboratory work, students may be required to attend sessions scheduled outside of the regularly scheduled class times. These sessions are scheduled with advance notice to the students.

In clinical laboratory science courses, a student who in any way acts dishonestly in class assignments or examinations shall be liable to dismissal from the department and being issued a grade of F.

For the safety of patients, peers and themselves, students are required to dress appropriately while attending clinical laboratory science sessions for all courses.

Senior students who wish to be excused from class for participation in athletics, band or chorus must have a grade point average of 2.600 to qualify for this privilege.

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, BloodCenter of Wisconsin, Clement J. Zablocki VA Medical Center, Dynacare Laboratories, Moreland Medical Center Laboratory, ProHealth Care Medical Associates and Wheaton Franciscan Healthcare, Inc. All affiliations are located in the Milwaukee area.

DEPARTMENT OF PHYSICAL THERAPY

MISSION

The faculty of the Department of Physical Therapy embraces the missions of the university and the College of Health Sciences to graduate entry-level professionals who recognize the need for ongoing reflective assessment to always elevate their work and service to a greater degree of excellence.

We strive to educate students who will develop into professionals who are knowledgeable of current practices and trends, skillful in applying their knowledge, flexible in their relationships with others, and motivated to serve others. Furthermore, to meet the current health care needs in underserved areas, we are committed to supporting programs of outreach that will enhance the enrollment and training of disadvantaged students and service to disadvantaged populations.

We seek to prepare students to become practitioners who are self-directed, lifelong learners, continually striving to advance their knowledge and skills and to understand the social, political, and economic forces that impact the profession. Our primary goal is to graduate physical therapists that are recognized by consumers and other health care professionals as practitioners of choice to whom consumers have direct access for diagnosis of, interventions for, and prevention of impairments, functional limitations, and disabilities related to movement, function, and health. Finally, we expect our graduates to support social justice in part by being role models in the service of disadvantaged segments of the population.

PHILOSOPHY

The department is committed to providing a generalist physical therapy education to qualified students who have completed a rigorous blend of humanities, social science, and basic science course work. The goal of the professional phase of the physical therapy curriculum is to continue to develop the Jesuit ideals of *cura personalis* (care for the total person) and men and women for others and to integrate these ideals into the delivery of health care.

The university's urban location facilitates cultural sensitivity and the opportunity for the department to respond to the diverse needs of the surrounding community. Given this, the department supports admission policies and procedures that are equitable and enrich diversity in the composition of the department's student body.

The department is committed to the concept of freshman admission, which reduces the need for competition between physical therapist students and aims to foster long-term comradeship among students and between students and educators. Such a noncompetitive environment is also believed to encourage students to pursue a well-rounded, socially conscious background of experiences. The department believes that these experiences, coupled with exposure to the common beliefs and values in the Jesuit educational tradition, magnify the educational process and reinforce the concept of *cura personalis*.

The teaching-learning process is recognized as a dynamic interaction of shared responsibility among the academic faculty, clinical faculty and students. The department supports the educational view that students learn in a multitude of ways, necessitating a variety of learning experiences. These experiences are important for the development of a life-long autonomous learner who is self-motivated, self-directed and able to construct knowledge, not just absorb it. Faculty are resources and role models in the development of these traits.

Each faculty member must accept the responsibility of being a role model by maintaining personal clinical competence, providing quality instruction, contributing to the general body of knowledge, showing professionalism, respecting the dignity of others and being advocates for patient and professional causes. Finally, they will help students to become educated members of society, active members of their profession, and role models for peers and future physical therapists.

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.

EXPECTED GLOBAL STUDENT OUTCOMES

Graduates of the Marquette University, Department of Physical Therapy will:

- 1) Demonstrate the skills necessary to provide autonomous physical therapy services in essential practice areas as defined by the *Guide to Physical Therapist Practice*.

- 2) Screen individuals through testing and differential diagnosis, to determine a physical diagnosis which is within the scope of physical therapy, and/or to determine the need for referral to other health professionals.
- 3) Apply evidence based decision making in planning and delivering effective, cost efficient plans of care.
- 4) Participate in professional learning.

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 2012 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 General Physics 1 and 2 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 health care major with a clinical component in their undergraduate coursework, may complete up to 40 hours of the required minimum 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 prior to June 1 preceding fall enrollment in the professional phase.

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 and cannot be completed through online courses. DPT prerequisites required before admission to the professional phase:

| <i>Area of Study</i> | <i>Credit Hours</i> |
|--|---------------------|
| Biology | 3 |
| General Chemistry 1 and 2 | 8 |
| Introduction to Physical Therapy | 1* |
| General 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.

ESSENTIAL FUNCTIONS

Students are made aware as freshmen and prior to entering the professional phase that all students must be able to carry out the basic duties of a generalist physical therapist with or without reasonable accommodation(s). A generalist P.T. is one who is capable of treating patients across the lifespan. Specifics of the essential functions are included in the P.T. student handbook.

ACCREDITATION

The Commission on Accreditation in Physical Therapy Education (CAPTE) has granted accreditation to the current Doctor of Physical Therapy program. Initial accreditation of the DPT program was granted in April of 2002. Current Accreditation Status: Accreditation. Five-year history: Accreditation. Students are free to contact CAPTE with questions or concerns by mail or phone at: CAPTE American Physical Therapy Association; 111 N. Fairfax St.; Alexandria, VA 22314; (703) 684-2782.

ACADEMIC REGULATIONS

UNDERGRADUATE PHASE

Students admitted to the DPT Program as freshmen must meet all requirements for advancement. These include: student must have achieved a 2.400 or greater cumulative grade point average in the specified prerequisite professional coursework (23 credits). Students must submit proof of completion of 80 volunteer and/or work related hours supervised by a physical therapist by June 1 after completion of the DPT3 academic year. Students must also have a demonstrated plan to receive their bachelor's degree at the end of the spring term of the DPT5 year in the professional phase (years 4, 5 and 6) of the program. Except for ATTR and EXSC students, students who do not complete their undergraduate degree in the traditional 4 years must submit a written plan to the PT Department Chairperson to complete their undergraduate degree within the required time frame. Students who complete pre-requisite credits (biology, chemistry, physics and statistics) in summer school need to do so at a four-year institution. No online courses are accepted for prerequisite physical therapy courses. Courses taken at other institutions require pre-approval from the Assistant Dean in the College of Health Sciences. Students failing to satisfy all requirements or students who are required to withdraw for academic reasons will not be admitted to the professional phase of the program. 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.

CR/NC GRADE OPTION

University guidelines allow junior and senior students to elect one course per term (to a maximum of four courses) for which only an CR or NC grade is assigned, given certain requirements are met. Refer to the CR/NC Option entry in The University section of this bulletin for the specific requirements. However, this CR/NC option is not available for any course that is part of the 23 prerequisite core credits nor any course normally required in the professional phase of the program.

COURSE SEQUENCE

Professional phase courses taken early while a student is in the pre-professional phase are subject to the academic standards held in the professional phase of the program including a minimum 2.200 GPA for all professional phase courses completed in a given semester. Moreover, all professional phase courses taken early must be completed with a C or better. Taking courses early and out of sequence is discouraged. No online prerequisite courses are accepted. Students who fail to meet these requirements may be placed on academic probation and required to retake professional phase courses.

PROFESSIONAL PHASE

A student must complete the academic requirements of the DPT program within four years of admission to the professional phase of the program in the fall semester of the DPT4 year, unless there are non-academic extenuating circumstances. Failure to complete the PT program requirements within the 4-year time limit may result in dismissal from the program. During the professional phase of the program a student will be considered in GOOD ACADEMIC STANDING if he/she completes the required course work in each semester with a 2.200 or greater semester GPA, completes each course with a grade of CD or better, and receives a satisfactory (S) grade in each internship experience. Failure to meet the academic requirements will result in probation or dismissal from the program, as outlined below.

FAILURE TO MAINTAIN GOOD ACADEMIC STANDING*FIRST INSTANCE*

Students who fail to meet the requirements for good academic standing for the first time will be placed on academic probation, either automatically or through a probation hearing. Terms of probation will be determined as described below:

Automatic Probation

A student is placed on automatic probation if, during the professional phase of the program, a single semester GPA for required courses falls within the range of 2.000 and 2.199 and all required courses are completed with a grade of CD or better. The average GPA of the semester resulting in probation and the next academic semester must be equal to or greater than 2.200.

Probation Hearing

Conditions of probation will be established by the Academic Standards Committee if any of the following circumstances occur:

- A. A grade of D or lower is received in one or more required courses in a single semester.
- B. A single semester GPA lower than 2.000.
- C. A student receives any UW or WA grade. (see student handbook for specifics)
- D. A U grade is received for a clinical internship experience in the physical therapy curriculum, in the absence of clinical misconduct (see Academic/Clinical Misconduct section).
- E. Failure to comply with professional behavior standards or requirements.
- F. Failure to comply with learning objectives set forth in a formal learning contract between the program and the student (See Professional Behavior Section).
- G. Failure to complete their undergraduate degree by the end of the spring semester of year 5.

Note: Students are typically required to remediate low course grades and/or semester GPAs. Due to the design of the physical therapy curriculum and sequencing of courses, remediation plans will likely cause delay of graduation for the student. Probation conditions will be established following a hearing between the student and the Academic Standards Committee. (See "Process for a Hearing with the Academic Standards Committee" in the *Physical Therapy Student Handbook*).

SECOND INSTANCE

Students who fail to meet the requirements for good academic standing for a second time during the professional phase of the program or fail to meet any conditions of probation will be subject to possible dismissal from the program. This includes students who were admitted into the professional phase of the program on probation due to failure to meet the admission requirements in the pre-professional phase. Failure to respond to notification of academic probation or notification of academic probation conditions within the stipulated time frame will also be considered a second instance resulting in possible dismissal from the program. Dismissal determinations will be made following a hearing between the student and the Academic Standards Committee (See "Process for a Hearing with the Academic Standards Committee" in the *Physical Therapy Professional Phase Student Handbook*).

PROFESSIONAL BEHAVIORS

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 internship. 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 an internship 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. Students are charged the higher professional phase tuition rate in years 4-6. 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 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 or internship, 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 internship 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).

WITHDRAWAL FROM COURSES

After the close of late registration, a student will no longer be allowed to withdraw from courses except for serious non-academic reasons. Any withdrawal from a single course will likely result in a delay in graduation for the student and it is required that the student meet with the chairperson of the Department of Physical Therapy prior to submitting a formal request. UW, WA or ADW grades may be grounds for dismissal from the program.

I, X, IX GRADES

Any student receiving or anticipating receiving an I, X or IX grade in a required D.P.T. course must meet with the chairperson of the Department of Physical Therapy to establish a plan for resolution. An I, X, or IX grade may prevent a student from continuing in the program resulting in a delay in graduation.

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 cer-

tification 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 fourth-year students must present evidence of health insurance coverage throughout the professional phase of the program. In addition each student must submit proof of meeting the following department requirements. **Students failing to meet the deadline will not be able to participate in the site selection process until all students who did meet the deadline have been assigned sites. In addition, students may not be able to participate in required laboratory experiences involving patient contact or visits to clinical facilities.**

- 1) Proof of health insurance
- 2) Current CPR certification (first-person, hands-on rescuer)
- 3) Proof of MMR vaccination (requires proof of two separate vaccinations)
- 4) Completion of OSHA training (yearly)
- 5) Hepatitis B vaccine or completed waiver form
- 6) Yearly proof of a negative TB test valid thru mid-August of the following year (some sites may require within 30-90 days of start date)
- 7) Criminal background checks for all states in which the student has lived during the past seven years or since age 17
- 8) Background disclosure form from the state of Wisconsin

Students are also required to keep and show proof of fulfillment of these requirements to their clinical sites. Some clinical sites may have requirements above and beyond those of the university. This information can be obtained from the student files and through direct contact with a representative of the clinical site. Students are responsible for determining and satisfying additional requirements a specific clinical site may have. Additional requirements may include, but are not limited to, drug testing, chest x-ray, physical, etc. The results of those tests may affect the student's eligibility for specific clinical placements.

Other requirements:

- 9) Proof of APTA membership for DPT 4's, proof of renewal for DPT 5's and 6's.
- 10) Attendance at one state or national physical therapy conference.

EMERGENCY CARE AND SAFETY

All clinical sites will provide the students with safety information including emergency procedures. There may be potential health risks at a clinical site. Students are required to complete yearly OSHA training. Students are not employees of the facility and are not covered by workman's compensation. Students provide proof of health insurance, but should also be aware that they are responsible for the cost of any emergency care, unless the injury or illness was due to negligence on the part of the facility. In non-emergency situations, students should expect to be responsible for their own medical care while off campus.

All DPT students are required to attend and provide documentation of completion of yearly OSHA training sessions, which assure that they have received training on OSHA guidelines for blood borne pathogens and universal precautions.

Patient Right to Refuse

Clinical Contracts state that patients have the risk-free-right to refuse to participate in clinical education and that patients/clients provide informed consent to being involved in the clinical education experience.

POLICY FOR STUDENTS REQUESTING ACCOMMODATIONS

It is the responsibility of a student to request reasonable accommodations in the classroom or laboratory. Students are encouraged to discuss their needs with their instructors. It is expected that students will be proactive in addressing learning needs rather than reactive. Disability Services which is part of the Office of Student Educational Services is a valuable resource to both students and faculty.

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 one of the Directors of Clinical Education at Marquette 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 4130 | 5 | BISC 4120 | 3 |
| BIOL 4701/5701* | 4 | BISC 3150*** | 3 |
| PHTH 7503 | 3 | PHTH 7515 | 4 |
| PHTH 7512 (DC) | 3 | PHTH 7525 | 3 |
| PHTH 7513 | 3 | PHTH 7528 | 2 |
| Medical Ethics** | 1 | PHTH 7530 | 2 |
| | | Medical Ethics** | 1 |
| | 14*-19 | | 17-18 |
| Summer Session | | | |
| | SEM. HRS. | | |
| PHTH 7504 | 2 | | |
| PHTH 7549 | 2 | | |
| PHTH 7560 | 4 | | |
| PHTH 7539 | 3 | | |
| PHTH 7522 | 2 | | |
| | 13 | | |
| Year 5 | | | |
| FALL TERM (12+4) | SEM. HRS. | SPRING TERM | SEM. HRS. |
| SEE HEALTH SCIENCES PROFESSIONAL CALENDAR | | | |
| PHTH 7518 | 3 | PHTH 7533 | 4 |
| PHTH 7523 | 1 | PHTH 7558 | 4 |
| PHTH 7505 | 2 | PHTH 7570 | 4 |
| PHTH 7532 | 4 | PHTH 7577 | 2 |
| PHTH 7526 | 3 | PHTH 7555 | 2 |
| PHTH 7986 section 1001 | 4 | PHTH 7667 | 2 |
| | 17 | | 18 |
| Summer Session | | | |
| PHTH 7986, section 1002 | | | |
| Clinical 2 | 10 Sem. hrs. | | |
| Year 6 | | | |
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| PHTH 7668 | 4 | PHTH 7986 section 1003 | 8 |
| PHTH 7675 | 4 | PHTH 7986 section 1004 | 8 |
| PHTH 7682 | 3 | | |
| PHTH 7684 | 2 | | |
| PHTH 7674 | 3 | | |
| PHTH 7932 Advanced electives | 0-2 | | |
| | 16-18 | | 16 |

† Students must receive their bachelor's degree at the end of the spring term of the DPT5 year in the professional phase (years 4, 5 and 6) of the program.

* BIOL 4701 is required for Physiological Science majors. BISC 4145 may be taken in the spring of the DPT-third year by physical therapy students in other majors in lieu of BIOL 4701.

** Students completing an undergraduate major in the College of Health Sciences must take PHIL 4336 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 4335 or THEO 4450 may not need medical ethics in year 4.

*** BISC majors take BISC 4160 during the 4th year and BISC 3150 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.

Minimum Total Credits — 126

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 the 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/ and outlined below.

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 and ATTR advisors as soon as possible to discuss programmatic differences that are required to meet each program's requirements.

Students must be aware that some courses in the DPT curriculum can be substituted to complete the ATTR degree, allowing the completion of both programs in a total of 6 years. However, this will result in a delay in graduation from the athletic training major. Students can participate in the May commencement ceremonies following completion of year four and continue in the PT program without interruption. However, undergraduate diplomas will not be granted until December, after successful completion of the DPT5 Fall semester, which fulfills the final ATTR requirements. See curriculum for specifics.

ACCREDITATION

The athletic training major has been granted accredited status through the Commission on Accreditation of Athletic Training Education (CAATE).

Students successfully graduating from this program are eligible to sit for the certification exam through the National Athletic Trainers' Association Board of Certification (NATABOC).

ADMISSION REQUIREMENTS

DIRECT ADMISSION

Admission to the athletic training major can occur at two points in the academic sequencing. The major is filled initially by the admissions office from a pool of incoming freshman who apply by Dec 1 of their senior year of high school. This decision is made from a ranking of applicants based largely on their high school performance, standardized test scores, and athletic training essay. The maximum number of students admitted to athletic training is limited as the program needs to provide adequate clinical supervision to each student. This cannot be accomplished with an excessive number of students. Once accepted by the university, students must provide a completed program physical form documenting compliance with the program's "Technical Standards" prior to beginning the program. See the "Technical Standards" for more information.

TRANSFER ADMISSION

Those students not admitted directly into the program have a chance to transfer into it. Transfers into athletic training are evaluated individually. The program will accept a minimum of 2 qualified transfer students into each sophomore class. Additional transfers into the athletic training major will only be considered if there are vacancies in the program created by previously accepted students transferring out of the major. In general, transfer students join the sophomore class of athletic training students and will need three additional years to complete the required athletic training classes regardless of their previous academic standing.

To be considered for a transfer into the athletic training major, the student must meet the following criteria:

1. Must have a minimum of 2.750 GPA (cumulative).
2. Must document that they have observed in an athletic training setting, preferably at Marquette, for 30 hours.

3. Must have completed or be currently enrolled in and successfully completing the required freshman courses which include:
 - a. CHEM 1001 and 1002
 - b. EXSC 1001 Introduction to Exercise Science
 - c. EXSC 1010 Emergency Care, CPR, and AED
 - d. BISC 1015 Principles of Human Anatomy and Physiology
 - e. EXSC 1050 Surface Anatomy and Palpation
 - f. ATTR 1020 Prevention and Care of Athletic Injuries
4. Must submit a signed Technical Standards form indicating their compliance with program technical standards. This must be verified with a completed program physical form prior to full acceptance into the major.

If candidate meets the criteria he/she must then fill out the transfer application and file this with the Program Director of Athletic Training by March 1st prior to the fall in which they will join the sophomore class. Eligible candidates will be interviewed and admission decisions will be made prior to the end of the school year.

If a student has not accomplished the necessary course work, they have to complete the coursework, and then apply the following year for admission into the next sophomore class. Again, transfers beyond 2 spots will only be considered if there is adequate space in the program.

Transfer students from outside of Marquette University must meet with the Program Director to determine their present standing and the process for applying to the athletic training major.

PROFESSIONAL CONDUCT AND ACADEMIC REGULATIONS

Students in the athletic training major are expected to adhere to the standards of conduct and professionalism set forth by the NATA and described in the student handbook. Professional behavior is vital to the success of every health care provider. To assist each student in developing and refining their professional behaviors, athletic training students are regularly evaluated during the Clinical Proficiency courses and Athletic Training Practicum. Violations and/or major deficiencies may prevent students from receiving clinical assignments and may be grounds for academic probation or dismissal.

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 GPA of 2.750. All students must comply with the College of Health Sciences graduation requirements. A student must earn a C or better in all major course requirements. Major courses completed with a CD or less count toward the total hour requirements, but do not fulfill graduation requirements. This class must be repeated prior to graduation from the athletic training major as described in the College of Health Sciences graduation requirements. The department will only allow those students who have satisfactorily completed all academic, technical and professional behavior requirements to attend a clinical affiliation or practicum. The program reserves the right to deny practicum placement to any student that has not satisfactorily met the requirements printed in the *Athletic Training Student Handbook*. Cancellation or delay of a practicum may result in delayed graduation.

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. Any student that misses a final exam in any course must file a written excuse with the College of Health Sciences office within 48 hours of the examination. Should the excuse be deemed valid, permission may be given for a delayed examination.

CERTIFICATION IN BASIC LIFE SUPPORT

Certification in basic life support that includes child, infant, and both one- and two-person adult CPR along with AED (automatic external defibrillation) training is required of all students. Certification may be obtained following successful completion of EXSC 1001. 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 128 credit hours for the major:

ATHLETIC TRAINING (ATTR)

Total minimum of 128 credit hours including the following requirements:

| Area | Credit Hours |
|-------------------|--------------|
| UCCS Requirements | 34-37 |
| Required Cognates | 17 |
| Major | 77 |

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 athletic training major. Students that are either direct admit DPT students or intend on applying to the DPT program must meet with an adviser as soon as possible to discuss programmatic differences that are required to meet entrance standards. Students must be aware that all required courses must be completed prior to matriculation.

Curricula have also been developed for those students interested in using Athletic Training as a pre-medical, pre-dental, pre-veterinary or pre-graduate school degree. Students are required to meet with an adviser to discuss programmatic differences based upon their unique circumstances.

UCCS AND PROGRAM CURRICULUM REQUIREMENTS

(Please refer to University Core of Common Studies (UCCS) for courses that will meet requirements if not specified below.)

| | |
|--|------------------|
| Rhetoric (R) | 6 credits |
| ENGL 1001, ENGL 1002 or COMM 1100 | |
| Mathematical Reasoning (MR) | 3 credits |
| Any approved UCCS statistics course | |
| Diverse Cultures (DC) | 3 credits |
| HEAL 1025 | |
| Histories of Cultures and Societies (HCS) | 3 credits |
| Any approved UCCS course | |
| Individual and Social Behavior (ISB) | 3 credits |
| PSYC 1001 | |
| Human Nature and Ethics (HNE) | 7 credits |
| PHIL 1001, PHIL 2310, PHIL 4336 (or other medical ethics course) | |
| Literature and Performing Arts (LPA) | 3 credits |
| Any approved UCCS course | |
| Science and Nature (SN) | 3 credits |
| BIOL 1001 | |
| Theology (T) | 6 credits |
| THEO 1001 plus any approved UCCS course | |

REQUIRED COGNATES

All students are required to complete BIOL 1001, BIOL 1002, BISC 4120, CHEM 1001, and CHEM 1002.

MAJOR REQUIREMENTS

The following courses are major requirements that must be completed with a C grade or better (see the Academic Performance section): BISC 1015 and all ATTR and EXSC courses listed in the curriculum.

TYPICAL ACADEMIC PROGRAM FOR ATHLETIC TRAINING MAJOR

Freshman Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------|-----------|-------------------------------|-----------|
| ENGL 1001 (R) | 3 | ENGL 1002/COMM 1100 (R) | 3 |
| UCCS (HCS) | 3 | HEAL 1025 (DC) | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| EXSC 1001 | 2 | BISC 1015 | 5 |
| EXSC 1010 | 2 | ATTR 1020 | 2 |
| BIOL 1001 (SN) | 3 | EXSC 1050 | 1 |
| | 17 | | 18 |

Sophomore Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|-----------------|-----------|
| EXSC 2115 | 5 | BIOL 1002 | 3 |
| PSYC 1001 (ISB) | 3 | EXSC 2190 | 3 |
| PHIL 1001 (HNE) | 3 | EXSC 2110 | 4 |
| ATTR 2130 | 3 | ATTR 2131 | 3 |
| ATTR 2981 | 1 | ATTR 2150 | 2 |
| THEO 1001 (T) | 3 | ATTR 2982 | 1 |
| | 18 | | 16 |

Junior Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-----------|-----------------|-----------|
| ATTR 3160 | 2 | ATTR 3170 | 3 |
| ATTR 3983 | 1 | EXSC 3180 | 4 |
| EXSC 3189 | 4 | ATTR 3984 | 1 |
| UCCS (MR—statistics course) | 3 | BISC 4120 | 3 |
| UCCS (LPA) | 3 | EXSC 2106 | 3 |
| PHIL 2310 (HNE) | 3 | | |
| | 16 | | 14 |

Senior Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|-----------------|-----------|
| EXSC 3187 | 3 | ATTR 4986 | 14-16 |
| PHIL 4336 | 1 | | |
| EXSC 3170 | 3 | | |
| UCCS (T) | 3 | | |
| ATTR 3985 | 1 | | |
| EXSC 4192 | 4 | | |
| | 15 | | 14-16 |

Minimum Total Credits — 128

TYPICAL ACADEMIC PROGRAM FOR ATHLETIC TRAINING MAJOR
AND DIRECT ADMIT DPT*Freshman Year*

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------|-----------|-------------------------------|-----------|
| ENGL 1001 (R) | 3 | ENGL 1002/COMM 1100 (R) | 3 |
| UCCS (HCS) | 3 | PHIL 1001 (HNE) | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| EXSC 1001 | 2 | BISC 1015 | 5 |
| EXSC 1010 | 2 | ATTR 1020 | 2 |
| BIOL 1001(SN) | 3 | EXSC 1050 | 1 |
| | 17 | | 18 |

Summer

| | |
|--------------------------------------|---|
| PSYC 1001 (ISB) and UCCS (LPA) | 6 |
|--------------------------------------|---|

Sophomore Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|-----------------|-----------|
| EXSC 2115 | 5 | BIOL 1002 | 3 |
| HEAL 1025 (DC) | 3 | EXSC 2190 | 3 |
| PHIL 2310 (HNE) | 3 | EXSC 2110 | 4 |
| THEO 1001 (T) | 3 | ATTR 2131 | 3 |
| ATTR 2130 | 3 | ATTR 2150 | 2 |
| ATTR 2981 | 1 | ATTR 2982 | 1 |
| | | PHTH 1001 | 1 |
| | 18 | | 17 |

Junior Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-----------|-----------------|-----------|
| ATTR 3160 | 2 | ATTR 3170 | 3 |
| ATTR 3983 | 1 | EXSC 3180 | 4 |
| EXSC 3189 | 4 | ATTR 3984 | 1 |
| UCCS (MR—statistics course) | 3 | EXSC 2106 | 3 |
| UCCS (T) | 3 | PHYS 1002 | 4 |
| PHYS 1001 | 4 | PHIL 4336 | 1 |
| | 17 | | 16 |

Senior Year DPT Curriculum

Students enrolled in the Doctor of Physical Therapy program will follow the curricula as established by the Physical Therapy Department. The curriculum includes courses in the fourth and fifth year of the DPT program that will substitute for required ATTR major courses (listed in parenthesis). Students can participate in the May commencement ceremony with their class, however, diplomas and official transcripts will not be granted until satisfactory completion of the fall semester in the DPT5 year.

Senior Year

| FIRST TERM | CREDITS | SECOND TERM | CREDITS |
|--------------------------------|---------|---------------------------------|---------|
| PHTH 7513(for EXSC 3170) | 3 | BISC 4120 | 3 |
| BIOL 4701* | 4 | BISC 3150 | 3 |
| BISC 4130 | 5 | PHTH 7515 (for EXSC 3187) | 4 |
| PHTH 7503 | 3 | PHTH 7528 | 2 |
| PHTH 7512 (DC) | 3 | PHTH 7525 | 3 |
| ATTR 3985 | 1 | PHTH 7530 | 2 |
| | 19 | | 17 |

*or BISC 4145 (offered Spring term only)

Summer Session

| MODULE 1 | CREDITS | MODULE 2 | CREDITS |
|---------------------------------|---------|-----------------|---------|
| PHTH 7504 (for ATTR 4986) | 2 | PHTH 7560 | 4 |
| PHTH 7549 | 2 | PHTH 7522 | 2 |
| PHTH 7539 | 3 | | |
| | 7 | | 6 |

DPT 5 Year

| FALL TERM | CREDITS |
|---|---------|
| PHTH 7518 (for EXSC 4192/5192) | 3 |
| PHTH 7523 | 1 |
| PHTH 7505 | 2 |
| PHTH 7532 | 4 |
| PHTH 7526 | 3 |
| PHTH 7986 section 1001 (for ATTR 4986) .. | 4 |
| | 17 |

Minimum Total Credits — 128

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.

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 2010.

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.

ACADEMIC PERFORMANCE

Candidates for a degree must earn at least the minimum number of credits listed in their curriculum and a minimum GPA of 2.600. All students must comply with the College of Health Sciences graduation requirements. All students must carry a grade point average of 2.4000 as a freshman, 2.600 as a sophomore through senior, based on a 4.0 system. A student should understand that a grade point average of 3.000 or better is required for admission consideration by most graduate programs. A student must earn a C or better in all major courses. Major courses completed with a CD or less count toward the total hour requirements but do not fulfill graduation requirements and must be repeated prior to advancing in course sequence.

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.

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. Any student that misses a final exam in any course must file a written excuse with the College of Health Sciences office within 48 hours of the examination. Should the excuse be deemed valid, permission may be given for a delayed examination.

CERTIFICATION IN BASIC LIFE SUPPORT

Certification in basic life support that includes child, infant, and both one- and two-person adult CPR along with AED (automatic external defibrillation) training is required of all students. Certification may be obtained following successful completion of EXSC 1010. 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 | 37 |
| Required Cognates | 14 |
| Major (includes three credits of advanced EXSC electives) | 65 |
| Electives | 15 |

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 PROGRAM CURRICULUM REQUIREMENTS

(Please refer to University Core of Common Studies (UCCS) for courses that will meet requirements if not specified below.)

| | |
|--|------------------|
| Rhetoric (R) | 6 credits |
| ENGL 1001, ENGL 1002 or COMM 1100 | |
| Mathematical Reasoning (MR) | 3 credits |
| Any approved UCCS statistics course | |
| Diverse Cultures (DC) | 3 credits |
| HEAL 1025 | |
| Histories of Cultures and Societies (HCS) | 3 credits |
| Any approved UCCS course | |
| Individual and Social Behavior (ISB) | 3 credits |
| PSYC 1001 | |
| Human Nature and Ethics (HNE) | 7 credits |
| PHIL 1001, PHIL 2310, PHIL 4336 (or other medical ethics course) | |
| Literature and Performing Arts (LPA) | 3 credits |
| Any approved UCCS course | |
| Science and Nature (SN) | 3 credits |
| BIOL 1001 | |
| Theology (T) | 6 credits |
| THEO 1001 plus any approved UCCS course | |

REQUIRED COGNATES

All students are required to complete BIOL 1001, BIOL 1002, CHEM 1001 and CHEM 1002.

MAJOR REQUIREMENTS

The following courses are major requirements that must be completed with a C grade or better (see the Academic Performance section): BISC 1015 and all EXSC courses listed in the curriculum. In addition to these required cognates, students not entering the DPT program, need to complete a minimum of 3 credits of advanced EXSC electives and students entering the DPT program need to complete a minimum of 2 credits of advanced EXSC electives.

TYPICAL ACADEMIC PROGRAM FOR EXERCISE SCIENCE MAJOR

Freshman Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------------|-----------|-------------------------------|-----------|
| ENGL 1001 (R) | 3 | ENGL 1002/COMM 1100 (R) | 3 |
| CHEM 1001 | 4 | HEAL 1025 (DC) | 3 |
| EXSC 1010 | 2 | CHEM 1002 | 4 |
| EXSC 1001 | 2 | BISC 1015 | 5 |
| BIOL 1001 (SN) | 3 | EXSC 1050 | 1 |
| UCCS (HCS) | 3 | | |
| | 17 | | 16 |

Major courses (BISC 1015 and all EXSC courses listed in the curriculum) completed with a CD or less must be repeated prior to advancing in course sequence.

Sophomore Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|-----------------------|-----------|
| EXSC 2115 | 5 | PHIL 2310 (HNE) | 3 |
| PSYC 1001 (ISB) | 3 | EXSC 2190 | 3 |
| PHIL 1001 (HNE) | 3 | EXSC 2110 | 4 |
| THEO 1001 (T) | 3 | Statistics (MR) | 3 |
| UCCS (LPA) | 3 | BIOL 1002 | 3 |
| | 17 | | 16 |

Major courses (BISC 1015 and all EXSC courses listed in the curriculum) completed with a CD or less must be repeated prior to advancing in course sequence.

Junior Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|----------------------|-----------|
| EXSC 3100 | 3 | EXSC 3180 | 4 |
| EXSC 3986 | 2 | EXSC Elective* | 3 |
| EXSC 3189 | 4 | EXSC 2106 | 3 |
| Electives | 6 | Elective | 3 |
| | 15 | UCCS (T) | 3 |
| | | | 16-17 |

Senior Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|-----------------|-----------|
| PHIL 4336 | 1 | EXSC 4986 | 16 |
| EXSC 3170 | 3 | | |
| EXSC 3187 | 3 | | |
| EXSC 4192 | 4 | | |
| Electives | 4 | | |
| | 15 | | |

* Minimum of 3 credits of advanced exercise science electives required

Minimum Total Credits — 128

TYPICAL PROGRAM FOR EXERCISE SCIENCE MAJOR AND DIRECT ADMIT DPT

Freshman Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|----------------|-----------|-------------------------|-----------|
| ENGL 1001 (R) | 3 | ENGL 1002/COMM 1100 (R) | 3 |
| CHEM 1001 | 4 | HEAL 1025 (DC) | 3 |
| EXSC 1001 | 2 | CHEM 1002 | 4 |
| EXSC 1010 | 2 | BISC 1015 | 5 |
| BIOL 1001 (SN) | 3 | PHTH 1001 | 1 |
| | | EXSC 1050 | 1 |
| | 14 | | 17 |

Major courses (BISC 1015 and all EXSC courses listed in the curriculum) completed with a CD or less must be repeated prior to advancing in course sequence.

Sophomore Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|-----------------|-----------|
| EXSC 2115 | 5 | PHIL 2310 (HNE) | 3 |
| PSYC 1001 (ISB) | 3 | EXSC 2190 | 3 |
| PHIL 1001 (HNE) | 3 | EXSC 2110 | 4 |
| THEO 1001 (T) | 3 | Statistics (MR) | 3 |
| UCCS (HCS) | 3 | BIOL 1002 | 4 |
| | 17 | | 16 |

Major courses (BISC 1015 and all EXSC courses listed in the curriculum) completed with a CD or less must be repeated prior to advancing in course sequence.

Junior Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------|-----------|-----------------|-----------|
| EXSC 3100 | 3 | EXSC 3180 | 4 |
| EXSC 3189 | 4 | EXSC elective** | 2-3 |
| EXSC 3986 | 2 | EXSC 2106 | 3 |
| UCCS (LPA) | 3 | PHYS 1002 | 4 |
| PHYS 1001 | 4 | UCCS (T) | 3 |
| PHIL 4336 | 1 | | |
| | 17 | | 16-17 |

** Minimum of 2 credit of advanced exercise science electives required

Senior Year DPT Curriculum

Students enrolled in the Doctor of Physical Therapy program will follow the curricula as established by the Physical Therapy Department. The curriculum includes courses in the fourth and fifth year of the DPT program that will substitute for required EXSC major courses (listed in parenthesis). Students can participate in the May commencement ceremony with their class, however, diplomas and official transcripts will not be granted until satisfactory completion of the fall semester in the DPT5 year.

Senior Year/DPT4 Year

| FIRST TERM | CREDITS | SECOND TERM | CREDITS |
|---------------------------|---------|---------------------------|---------|
| PHTH 7513 (for EXSC 3170) | 3 | BISC 4120 | 3 |
| BIOL 4701* | 4 | BISC 3150 | 3 |
| BISC 4130 | 5 | PHTH 7515 (for EXSC 3187) | 4 |
| PHTH 7503 | 3 | PHTH 7528 | 2 |
| PHTH 7512 (DC) | 3 | PHTH 7525 | 3 |
| | | PHTH 7530 | 2 |
| | 18 | | 17 |

*Or BISC 4145 (offered Spring term only)

Summer Session

| | | | |
|-------------------------------------|-------|---------------------|-------|
| PHTH 7504 (for EXSC 4986) | 2 | PHTH 7560 | 4 |
| PHTH 7549 | 2 | PHTH 7522 | 2 |
| PHTH 7539 | 3 | | |
| | <hr/> | | <hr/> |
| | 7 | | 6 |

DPT5 Year

FALL TERM

| | |
|-------------------------------------|---|
| PHTH 7518 (for EXSC 4192) | 3 |
| PHTH 7523 | 1 |
| PHTH 7505 | 2 |
| PHTH 7532 | 4 |
| PHTH 7526 | 3 |
| PHTH 7986 (for EXSC 3189) | 4 |

17

Minimum Total Credits — 128

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, affectively, 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 listeners, observers, communicators 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 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.
- Contribute to the education of future PA students by participating in physician assistant training.

UNDERGRADUATE ADMISSION REQUIREMENTS

Students apply for admittance into the Physician Assistant Studies program in the fall term of their sophomore year. They are required to complete 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 health care 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. Cumulative GPA of 3.000 or greater
2. Motivation, maturity, ability to work with people, and suitability for clinical practice
3. Two hundred contact hours health care and other work experience
4. Knowledge of the PA profession and the profession's role in the health care system
5. Graduate Record Exam or MCAT scores for applicants with a degree; SAT or ACT scores for applicants entering the program without a completed bachelor's degree.
6. Three letters of recommendation
7. Personal interviews

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 GPA of 2.800 in each term 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 are required to obtain a 2.800 GPA, 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 2.800 with no single grade below C the academic probation is dropped. If the student is unsuccessful in obtaining a 2.800 or has a single grade below C the following term, the student may 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 PRE-PHYSICIAN ASSISTANT STUDIES (BIOMEDICAL SCIENCES MAJOR)

| <i>First Year</i> | | | |
|----------------------|-----------|-------------------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| ENGL 1001 (R) | 3 | ENGL 1002/COMM 1100 (R) | 3 |
| CHEM 1001 | 4 | CHEM 1002 | 4 |
| BIOL 1001 (SN) | 3 | BIOL 1002 | 3 |
| UCCS (HCS) | 3 | History elective | 3 |
| THEO 1001 (T) | 3 | PSYC 1001 (ISB) | 3 |
| BISC 1001* | 1 | | |
| | 17 | | 16 |

| <i>Second Year</i> | | | |
|--|-----------|-----------------------|-----------|
| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
| UCCS (LPA) | 3 | Elective | 3 |
| CHEM 2111 | 4 | CHEM 2112 | 4 |
| PHIL 1001 (HNE) | 3 | UCCS (T) | 3 |
| BISC 2125 | 4 | PHIL 2310 (HNE) | 3 |
| Health and Society Requirement** | 3 | Statistics (MR) | 3 |
| | 17 | | 16 |

*Only required of new freshmen entering the BISC major. Not required for internal or external transfers.

**BISC 2150, HEAL 2100, POSC 6956, PSYC 3420, SOCI 2300, SOCI 4300, SOCI 3520, SOCI 3500, SOCI 3550, SOCI 3570, or SOWJ 1001. Special topics (4930) and topics (4931) courses that relate to health and society may be approved on an individual basis.

THREE-YEAR PROFESSIONAL PHASE

Third Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|-----------------|-----------|
| BISC 3110 | 3 | BISC 4145 | 4 |
| BISC 3213 | 4 | BISC 3150 | 3 |
| BISC 4130 | 5 | BISC 4165 | 1 |
| PHAS 7040 | 1 | BISC 4140 | 3 |
| PHIL 4336 | 1 | BISC 7410 | 4 |
| BISC 4160 | 3 | PHAS 7117 | 3 |
| | 17 | | 18 |

Summer Session between third and fourth year

| | |
|-----------------|----|
| PHAS 7050 | 4 |
| PHAS 7080 | 2 |
| PHAS 7090 | 3 |
| PHAS 7270 | 4 |
| PHAS 7245 | 2 |
| | 15 |

Fourth Year

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------|-----------|-----------------|-----------|
| BISC 7120 | 4 | PHAS 7111 | 5 |
| PHAS 7110 | 5 | PHAS 7220 | 3 |
| PHAS 7115 | 4 | PHAS 7240 | 2 |
| PHAS 7200 | 1 | PHAS 7235 | 3 |
| PHAS 7265 | 1 | PHAS 7230 | 2 |
| PHAS 7255 | 2 | PHAS 7250 | 3 |
| PHAS 7260 | 3 | PHAS 7116 | 1 |
| | 20 | | 19 |

Students may not enter the final year of the PA program unless their undergraduate degree has been awarded.

Fifth Year (May – May)

A Master's degree in Physician Assistant Studies requires successful completion of 33 credits of Clinical Clerkship experiences, in addition to a 6 credit Master's Capstone Project. Required Clinical Clerkship experiences include 3 eight-week clerkships (Family Practice, Internal Medicine and Emergency Medicine), 2 four-week clerkships (Pediatrics and Adult General Surgery), and 3 four-week elective clerkships in various medical disciplines.

| | | | |
|---|---|--|---|
| PHAS 7986 Clinical Family Practice | 6 | PHAS 7986 Clinical Elective 1 | 3 |
| PHAS 7986 Clinical Internal Medicine | 6 | PHAS 7986 Clinical Elective 2 | 3 |
| PHAS 7986 Clinical Emergency Medicine | 6 | PHAS 7986 Clinical Elective 3 (8 wk) | 6 |
| PHAS 7986 Clinical Pediatrics | 6 | PHAS 7986 Clinical Elective 4 | 3 |
| PHAS 7986 Clinical General Surgery (4 wk) | 3 | PHAS 7997 Master's Capstone Project | 6 |

Minimum Total Credits — 128

DEPARTMENT OF SPEECH PATHOLOGY AND AUDIOLOGY

The Department of Speech Pathology and Audiology at Marquette University offers a Bachelor of Science degree in Speech Pathology and Audiology and a Master of Science degree in Speech-Language Pathology. The undergraduate program is considered pre-professional, meaning that a graduate degree is necessary before a person is qualified for professional employment.

The primary purpose of the undergraduate program is to provide introductory level knowledge in the field of Speech Pathology and Audiology, within the context of a traditional liberal Arts and Sciences education, which prepares an individual for study in a professional graduate degree program. This liberal education is based on the philosophy that the individual with an educational foundation in the Arts and Sciences will have a broad appreciation for society and its values. Such a traditional undergraduate emphasis provides the needed foundation for the more narrowly focused professional education at the graduate level and is suitable for careers in other communication, education, and health-related professions besides speech-language pathology and audiology.

The undergraduate major in Speech Pathology and Audiology includes courses in the areas of normal speech production and development, disorders of speech, language and hearing, and methods of evaluation and therapy. Clinical practicum involves actual work with children and adults having speech/language/hearing problems under the direct supervision of certified speech-language pathologists and audiologists. This work is accomplished at the Marquette University Speech and Hearing Clinic.

Professional preparation occurs at the graduate level and is a prerequisite for certification/licensure as a professional speech-language pathologist or audiologist. Marquette University's M.S. Program in Speech-Language Pathology is accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association (CAA-ASHA) and is directed 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 graduate 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 pathologist or audiologist 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 admission consideration by 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 undergraduate degree requirements, their admission as a regular degree status (RDS) student in the graduate program is activated.

BILINGUAL ENGLISH-SPANISH CERTIFICATE (BIES)

The Department of Speech-Pathology and Audiology offers a Bilingual English-Spanish Certificate (BIES) as part of its Master's Degree program in Speech-Language Pathology. The BIES program prepares speech-language pathology students who are proficient in Spanish to evaluate and treat speech, language and hearing problems in individuals who speak Spanish or are bilingual (Spanish-English) in educational or medical settings. This certificate program consists of four courses as well as clinical work specifically designed to meet guidelines suggested by the American Speech-Language-Hearing Association (ASHA) for bilingual speech-language pathologists. Two of these courses (SPAN 4120 – Phonetics and SPPA 4610 – Multicultural Issues for Speech-Language Pathologists) may be taken at the undergraduate level. Students who are Spanish-English bilingual and/or those who are considering a major or minor in Spanish are encouraged to meet with the Director of Graduate Studies in the Department of Speech Pathology and Audiology and an academic advisor in the Department of Foreign Languages and Literature for advising regarding potential admission to the BIES program at the graduate level.

STUDENTS WITH COMMUNICATIVE DISORDERS

The Department of Speech Pathology and Audiology at Marquette University is dedicated to graduating students with optimum preparation for successful careers in the profession of communication disorders. Since voice, fluency, articulation, language or hearing impairments may interfere with a clinician's ability to effectively treat persons with communication impairments, we encourage students in our program with such impairments to seek treatment.

ENGLISH PROFICIENCY

Our department supports the position of the American Speech-Language-Hearing Association in encouraging persons of diverse backgrounds to enter the field of communication disorders. All students in the Department of Speech Pathology and Audiology must provide evidence of adequate written and verbal communication skills in Standard American English necessary to meet academic and clinical requirements. Non-native speakers of English will work closely with their advisors throughout the course of their study toward establishing this proficiency prior to enrollment in clinical practicums. Students who speak with accents and/or dialects may seek assistance in improving these skills at the recommendation of department instructional staff.

ADMISSION REQUIREMENTS

Applicants to the Department of Speech Pathology and Audiology are expected to fulfill the admission requirements listed in the University section of this bulletin. Entering 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 grade 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 grade point average of 3.000 or better is required for admission consideration by 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 GPA of 2.800 at the conclusion of their sophomore year to continue the program. Credits include the following requirements:

UCCS AND DEPARTMENT CURRICULUM REQUIREMENTS

Students majoring in Speech Pathology and Audiology must complete a minimum of 52 semester hours of core curriculum requirements. The University Core of Common Studies (UCCS) curriculum is included in the Speech Pathology and Audiology (SPPA) Core Curriculum requirements.

Rhetoric (R) **6 credits**

All students must complete ENGL 1001 – Expository Writing 1 and ENGL 1002 – 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 the appropriate ESLP course and the section of ENGL 1001 designated for non-native speakers.

Mathematical Reasoning (MR) **3 credits**

All students must complete MATH 1700 – 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 1001 – Growth of Western Civilization 1 and HIST 1002 – Growth of Western Civilization 2.

Individual and Social Behavior (ISB) **6 credits**

All students must take PSYC 1001 – General Psychology and PSYC 3101 – 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 1015 – Principles of Human Anatomy or BIOL 1001– General Biology 1 AND complete PHYS 1001 – General Physics 1.

Human Nature and Ethics (HNE) **7-9 credits**

All students must complete PHIL 1001 – Philosophy of Human Nature, PHIL 2310 – Theory of Ethics and PHIL 4336 – Applied Ethics for the Heath Sciences (or other medical ethics course).

Theology (T) **6 credits**

All students must complete THEO 1001 – Introduction to Theology and another THEO course approved for inclusion in the UCCS curriculum.

Foreign Language0-8 credits

All students must demonstrate one-year college competency in a foreign language — foreign language 1-2. This may be accomplished by placement or course. Students who have never studied a foreign language or wish to pursue a new language must take levels 1 and 2 to complete the requirement. Students who have earned high school credit in French, German or Spanish, and who plan to continue with the study of that language must take the WebCAPE Placement Examination to determine placement in the appropriate course. On the basis of the achieved score, students will be placed in the appropriate language course. Students who are placed in 3 or higher are exempt from the foreign language requirement. For further details, see the University section on Placement Credit in Foreign Languages.

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 1001 | Introduction to Speech Language Pathology and Audiology (3 credits) |
| SPPA 1100 | Anatomy and Physiology of the Speech and Hearing Mechanism (3 credits) |
| SPPA 2120 | Phonetics and Phonology(3 credits) |
| SPPA 2130 | Child Language Development (3 credits) |
| SPPA 2210 | Child Language Disorders (3 credits) |
| SPPA 2220 | Child Speech Sound Disorders (3 credits) |
| SPPA 3140 | Speech Science (3 credits) |
| SPPA 3510 | Introduction to Audiology (3 credits) |
| SPPA 3710 | Intervention Methods in Speech-Language Pathology (3 credits) |
| SPPA 3964 | Practicum in Speech-Language Pathology 1: Campus Clinic (1 credit) |
| SPPA 4230 | Stuttering and Other Fluency Disorders (3 credits) |

and an additional seven (7) semester credit hours in Speech Pathology and Audiology courses selected from:

| | |
|-----------|--|
| SPPA 4310 | Introduction to Neurological Disorders (3 credits) |
| SPPA 4520 | Hearing Disorders (3 credits) |
| SPPA 4530 | Audiological Rehabilitation (3 credits) |
| SPPA 4610 | Multicultural Issues for Speech-Language Pathologists (3 credits) |
| SPPA 4720 | Diagnostic Methods in Speech Pathology (3 credits) |
| SPPA 4964 | Practicum in Speech-Language Pathology 2: Campus Clinic (1 credit) |
| SPPA 4965 | Practicum in Audiology: Campus Clinic (1 credit) |

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 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:

PSYC 3130 The Psychology of the Exceptional Child (3)

SPPA 4610 Multicultural Issues for Speech-Language Pathologists (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

The Marquette University Speech and Hearing Clinic serves as a working laboratory for students in the speech pathology and audiology program. The clinic has individual therapy rooms for adults and children, three diagnostic suites, a hearing testing suite and rooms designed for specialized speech/language therapy: child language room, adult language room, augmentative/alternate communication room and sensory integration room. Other speech pathology and audiology laboratories include child language, phonology and language analysis, bilingual language and literacy, speech and swallowing, neurolinguistics, dysphagia, and student computer room.

CURRICULA INFORMATION

TYPICAL PROGRAM FOR SPEECH PATHOLOGY AND AUDIOLOGY MAJORS

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------------------|-----------|------------------------|-----------|
| SPPA 1001 | 3 | SPPA 1100 | 3 |
| ENGL 1001 (R) | 3 | ENGL 1002 (R) | 3 |
| HIST 1001 (HCS) | 3 | UCCS (SN) | 3-5 |
| MATH 1700 (MR) | 3 | Foreign Language | 3-4 |
| Foreign Language | 3-4 | Elective | 3 |
| | 15-16 | | 15-18 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|---------------------|-----------|
| SPPA 2120 | 3 | SPPA 2210 | 3 |
| SPPA 2130 | 3 | SPPA 2220 | 3 |
| PHIL 1001 (HNE) | 3 | THEO 1001 (T) | 3 |
| PSYC 1001 (ISB) | 3 | UCCS (LPA) | 2-3 |
| PHYS 1001 | 4 | HIST 1002 | 3 |
| | | Elective | 3 |
| | 16 | | 17-18 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|-------------------------------|-----------|
| SPPA 3140 | 3 | SPPA 4230 | 3 |
| PSYC 3101 | 3 | SPPA 3710 | 3 |
| PHIL 2310 (HNE) | 3 | SPPA 3964 | 1 |
| UCCS (T) | 3 | SPPA 3510 | 3 |
| UCCS (LPA) | 3 | PSYC 3130 (recommended) | 3 |
| Elective | 3 | PHIL 4336 | 1 |
| | 18 | | 14 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------|-----------|---------------------|-----------|
| SPPA Elective | 1 | SPPA Elective | 3 |
| SPPA Elective | 3 | UCCS (DC) | 3 |
| Elective | 3 | Elective | 3 |
| Elective | 3 | Elective | 3 |
| Elective | 3 | Elective | 3 |
| Elective | 3 | | |
| | 16 | | 15 |

COURSE DESCRIPTIONS

HEALTH SCIENCES (HESC)

HESC 1115. Disability and the Christian Church 3 sem. hrs.

This course deals with the Christian Church's response to and ministry with persons with disabilities, including physical, cognitive, and developmental disability; mental illness; chronic pain/suffering. Beginning and end of life issues, as they relate to disability, are studied, including prenatal screening/diagnosis, hydration/nutrition, aggressive health care measures, and euthanasia. The Church's response to disability, theological/scriptural basis for that response, and architectural and attitudinal barriers to full participation in the life of the Church are presented.

HESC 1931. Topics in Health Sciences 0-3 sem. hrs.

Selected topics in health sciences. Specific topics will be designated in the *Schedule of Classes*. 0 credit will be SNC/UNC grade assessment; 1-3 credits will be graded.

HESC 4995. Independent Study in Health Sciences 1-3 sem. hrs.

Prereq: Cons. of dept. ch. and cons. of assistant dean.

BIOMEDICAL SCIENCES (BISC)

Chair and Professor: Vaughn

Associate Chair and Associate Professor: Lobner
Associate Professor: W. Bell, Cullinan, Kos, Rajala, Siebenlist

Assistant Professor: Baker, Cannon, Choi, Gasser, Ghasemzadeh, Mantsch, Peoples, Roseberry

Clinical Assistant Professor: Carroll
Laboratory Supervisor: Franklin

Adjunct Associate Professor: Biel, Curtis
Adjunct Assistant Professor: Brophy, Cimrmanic, Crowe, Feldman, Jurken, Kirstbaum, Kurpad, Levene, Papanek, Petitjean, Raff, Roznik, Sischo, Shinnors, Troy, Zanoni

Adjunct Clinical Instructor: Wenninger

Adjunct Clinical Assistant Professor: Risinger

The department offers human-oriented courses in anatomy, biochemistry, microbiology, nutrition, pathology, pharmacology and physiology at the undergraduate, graduate and professional level. Courses available to undergraduates and professional students are described in this section.

BISC 1001. Contemporary Issues in Biomedical Sciences 1 sem. hr.

Introduction to material presented in biomedical sciences courses with a special emphasis on current topics in health and medicine, development of critical thinking skills, and discussion of how the results of biomedical research become accepted scientific knowledge. Offered fall term.

Prereq: BISC major with Freshman stndg.

▲BISC 1010. Contemporary Issues in Nutrition 3 sem. hrs.

Personalized nutrition applications for health promotion designed for non-science majors. Topics include scientific methods, nutrients, life cycle nutrition, weight management, disordered eating, dietary supplements (including botanicals) and nutrition

and fitness. Not to be taken for credit by students who have had HEAL 2045 or BISC 3110. Offered spring term.

▲BISC 1015. 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 1030. Introduction to Dentistry 1 sem. hr.

An introduction to the diverse aspects of the dental profession, featuring guest speakers and hands-on laboratory techniques. Offered spring term. S/U grade assessment. *Prereq: Cons. of dept. ch.*

BISC 1060. Chemistry for the Health Professions 3 sem. hrs.

An introduction to general chemistry and organic chemistry stressing those aspects necessary for the health professions. *Prereq: NURS major.*

BISC 2050. Organic Chemistry for the Health Sciences 2 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 1001 and CHEM 1002.*

BISC 2070. 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 1060; or courses in general and organic chemistry; or cons. of instr.

BISC 2125. 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 2135. 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 2136. Gross Anatomy for the Biomedical Sciences 2 sem. hrs.

This undergraduate human gross anatomy laboratory course takes a regional approach to the dissection of human cadaveric material and includes all body structures/systems. Space reserved for Biomedical Sciences majors in good standing. Enrollment is limited based upon specimen availability. Offered spring term.
Prereq: BISC 2135 and cons. of instr.

BISC 2150. Social Justice Issues in Health Science 3 sem. hrs.

Current state of the US health care system, with an emphasis on the health care safety net and access to care issues; global health issues; comparison of the international health plans and the bioethics of health care rationing. Community health care providers, administrators and political advocates guest lecture to provide first-hand knowledge of the current issues and potential solutions, and serve as models for careers that make a difference. Offered fall term. *Prereq: Soph. stndg.*

BISC 2173. Principles of Human Embryology 3 sem. hrs.

System by system approach to the understanding of the sequence of human embryonic and fetal development. Early events include gametogenesis, implantation and placentation are covered to give a foundation for discussing the development of major organ systems. Discusses the underlying causes of morphological errors in the development which lead to congenital malformations. Effects of harmful (teratogenic) substances early in the developmental period are stressed. Students given a basic understanding of early inductive influences on major organ systems. *Prereq: Soph. stndg.*

BISC 3110. 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: Biochemistry and BISC major; or cons. of instr. Not to be taken for credit by students who have had BISC 1010 or HEAL 2045.*

BISC 3112. Head and Neck Anatomy 3 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.
Prereq: BISC 1015 or BISC 2135.

BISC 3115. Human Microbiology 3 sem. hrs.

Cytology, physiology and genetics of bacteria, viruses, fungi and animal parasites of medical importance. Basic identification procedures. Control of microorganisms; sterilization/disinfection, chemotherapy, immunization, epidemiology. Host-parasite interactions. The nature and the responses of the immune system. Study of the major infectious diseases. Offered fall term.
Prereq: A Biochemistry course, which may be taken concurrently; or cons. of instr.

BISC 3150. 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, Power Point, Web sites and examination objectives. Offered spring term.
Prereq: Courses in anatomy and physiology; or PPTH major; or PHAS major; or cons. of instr.

BISC 3213. Biochemistry 4 sem. hrs.

The chemistry of living cells in health and disease. The structure and function of proteins, carbohydrates, fats, nucleic acids, the metabolic regulation of human cells, and current techniques in molecular medicine are covered. Offered fall term.
Prereq: CHEM 2111 and CHEM 2112.

BISC 4120. 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: Biochemistry and BISC 1015; or Biochemistry and BISC 4145.*

BISC 4130. 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: PHTH major; or PHAS major 2.

BISC 4140. Functional Neuroanatomy

3 sem. hrs.

Examines the basic structure and function of the central nervous system from spinal cord to cerebral cortex. Material will be presented within both clinical and basic contexts. Based on the understanding of the normal circuitry and function of the brain, clinically relevant neurological disorders and basic neuroanatomical methods will also be explored. Laboratory included. Offered spring term.

Prereq: BISC 2135 or BISC 4130.

BISC 4145. Human Physiology 4 sem. hrs.

Human physiology including blood and circulation, muscular, neuronal and sensory systems, renal and respiratory systems, digestion, metabolism, reproduction, their control by the endocrine and central nervous systems, and clinical correlates. Offered spring term.

Prereq: BISC 2135; and a course in Biochemistry.

BISC 4160. Molecular Pathology 3 sem. hrs.

Cellular and molecular basis of human diseases, therapeutic interventions and current research efforts. Offered fall term.

Prereq: A course in biochemistry, which may be taken concurrently; cons. of instr.

BISC 4165. 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, darkfield, and phase contrast microscopy are utilized. Specialized techniques include antibiotic susceptibility testing, anaerobic cultivation and immunological assays. Offered spring term. *Prereq: BISC 7410 which may be taken concurrently; or BISC 3115; cons. of instr.*

BISC 4931. Topics in Biomedical Sciences

1-3 sem. hrs.

Selected topics in biomedical sciences. Specific topics will be designated in the *Schedule of Classes*.

BISC 4986. Internship 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. S/U grade assessment. *Prereq: Cons. of dept. ch.; cons. of Internship Director.*

BISC 4995. Independent Study in Biomedical Sciences 1-6 sem. hrs.

Research on a selected topic under the direction of a faculty member of the Department of Biomedical Sciences. *Prereq: Cons. of dept. ch.*

BISC 7120. Medical Pharmacology 4 sem. hrs.

Fundamentals of human pharmacology and basic principles dictating drug actions within the human body with emphasis on applications in general medicine. Focuses on the therapeutic actions and clinical applications of various drug classes. Topics include: cellular mechanisms, physiological responses, adverse reactions, drug-drug interactions, and clinical indications, accompanied by discussion on the pathological conditions for which common therapeutic agents are used. Applications of pharmacology commonly encountered by physician assistants are presented and are reinforced through interactive clinically correlated lectures presented by practicing physicians and physician assistants.

Prereq: BISC 3213, BISC 4145 and PHAS major.

BISC 7410. 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. Offered spring term. *Prereq: BISC 7513 or BISC 3213; School of Dentistry or PHAS major 2 only.*

BISC 7513. Dental 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: School of Dentistry only.

BISC 7514. 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 DENT 7121. Laboratory exercises promote visual identification of structure. Offered fall term. *Prereq: School of Dentistry only.*

BISC 7515. Biomedical Systems 1 3 sem. hrs.

Module 1 of a systems-based course integrating anatomy, physiology and pathology including dental clinical correlates. Offered spring term.

Prereq: School of Dentistry.

BISC 7516. Biomedical Systems 2 3 sem. hrs.

Module 2 of systems-based course integrating anatomy, physiology and pathology including dental clinical correlates. Offered spring term.

Prereq: School of Dentistry.

BISC 7517. Biomedical Systems 3 4 sem. hrs.

Module 3 of a systems-based course integrating anatomy, physiology and pathology including dental clinical correlates. Offered fall term.

Prereq: School of Dentistry.

BISC 7518. Biomedical Systems 4 4 sem. hrs.

Module 4 of a systems-based course integrating anatomy, physiology and pathology including dental clinical correlates. Offered fall term.

Prereq: School of Dentistry.

BISC 7520. Dental Pharmacology 4 sem. hrs.

Fundamentals of human pharmacology and basic principles dictating drug actions within the human body with emphasis on applications in dentistry. Focuses on the therapeutic actions and clinical applications of various drug classes. Topics include: cellular mechanisms, physiological responses, adverse reactions, drug-drug interactions, and clinical indications, accompanied by discussion on the pathological conditions for which common therapeutic agents are used. Applications of pharmacology commonly encountered by dentists are presented and are reinforced through interactive clinically correlated lectures presented by dental professionals.

Prereq: Enrolled in Dentistry.

BISC 7550. Remediation 0-6 sem. hrs.

Variable credits. Variable titles. 0 credit will be SNC/UNC grade assessment; 1-6 credits will be graded.

BISC 7995. Independent Study in Biomedical Sciences 1-6 sem. hrs.

Prereq: Cons. of dept. ch.

CLINICAL LABORATORY SCIENCE (CLLS)

Chairperson and Associate Professor: Milson

Associate Professor: Laatsch

Assistant Professor: Harkins

Clinical Assistant Professor: Hou

Adjunct (clinical) Assistant Professor: Maticek, Schmus

Medical Adviser: 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 Klingler College of Arts and Sciences, see the Klingler College of Arts and Sciences section of this bulletin.

Courses listed as "coreq" **must** be taken concurrently.

CLLS 1001. 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. (Saturdays).

Prereq: Enrolled in CLLS Young Scholar Program.

CLLS 1010. 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 BIOL 1001, which may be taken concurrently, and CHEM 1001, which may be taken concurrently; High school chemistry and biology with laboratory.*

CLLS 1100. Guided Study in Clinical Laboratory Studies 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. 0 credit will be SNC/UNC grade assessment; 1-4 credits will be graded.*

CLLS 2050. 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 2060. 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 food-borne health concerns, social and behavioral health issues, community health services, and the bioterorism response network.

CLLS 3124. Medical Bacteriology 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 bacterial infections explored. Concepts of the humoral immune response included. Offered every fall. *Prereq: CLLS major and Biochemistry, which may be taken concurrently.*

CLLS 3127. 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 studied along with concepts of the cellular immune response. Laboratory involves isolation and identification of medically important microorganisms, including proper patient specimen processing. Offered every spring.

Prereq: CLLS major and CLLS 3124.

CLLS 3140. Laboratory Instrumentation 3 sem. hrs.

Application of the principles of basic electronics, spectrophotometry, fluorometry, electrochemistry, flame emission and atomic absorption to laboratory instruments used in diagnostic and research laboratories. Selected laboratory experiments investigate these applications as related to clinical chemistry and hematology. Background in quality assurance is provided. Focuses on team problem-solving and instrument trouble-shooting. Offered every spring.

Prereq: CLLS major.

CLLS 3160. Molecular Diagnostics:**Laboratory Techniques** 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 4101 or BISC 2070 or BISC 3213. Can be taken concurrently.*

CLLS 3173. 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 electro-phoretic 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 3174. 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.

CLLS 4180. 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 audio-visuals. Offered annually.

Prereq: Sr. stndg. and CLLS major; individual assignments to clinical laboratory affiliations.

CLLS 4181. 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 4183. Clinical Chemistry and 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 4184. Clinical Hematology 2 and 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 4185. Clinical Hemostasis and

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 4186. Clinical Immunohematology and 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 4187. Clinical Immunology and Serology and 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 4188. Clinical Microbiology and 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 4189. Clinical Urinology and 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 4931. Topics in Clinical Laboratory Science 1-4 sem. hrs.

Selected topics in clinical laboratory science. Specific topics determined each term. Offered annually.

CLLS 4995. Independent Study in Clinical Laboratory Studies 1-4 sem. hrs.

Prereq: Cons. of dept. ch.

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: Papanek*

*Professor: Kloth (Emeritus), Neumann, Simoneau
Associate Professor: Ng, Rajala, Sobush
Adjunct Associate Professor: Aubert
Assistant Professor: Ebben, Hoeger-Bement, Hunter, Schindler-Ivens
Clinical Associate Professor, C. Simenz
Clinical Assistant Professor: C. Geiser, Kontney, Leigh, Parker, , Stoeckmann, Starsky, Vanden Noven
Clinical Instructors: Bielefeld, Boissonnault, M. Diamond, M. Geiser, Millington, Olsen, Olson, J. Pan, Uhrich, Wenninger, Wilk*

PHYSICAL THERAPY

PHTH 1001. 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 cons. of instr.

▲PHTH 4512. 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 7503. Patient Management 1 3 sem. hrs.

Lecture/laboratory course simulating patient interactions and discussing learning units that enforce application of course work to clinical practice.

Prereq: PHTH major.

PHTH 7504. Patient Management 2 2 sem. hrs.

Lecture/laboratory course simulating patient interactions and discussing learning units that enforce application of course work to clinical practice.

Prereq: PHTH major.

PHTH 7505. Patient Management 3 2 sem. hrs.

Lecture/laboratory course simulating patient interactions and discussing learning units that enforce application of course work to clinical practice.

Prereq: PHTH major; and concurrent enrollment in PHTH 7986.

PHTH 7512. 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 7513. 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. 7000 level course contains enhanced content. Open to practicing Physical Therapists.

Prereq: PHTH major; or cons. of instr.

PHTH 7515. Pathophysiology and Aging 4 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: Physiology; and current enrollment in BISC 3150.

PHTH 7518. 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 and PHTH 7515; or enrolled in Health Sciences - Professional and PHTH 7515; and current certification in CPR for the health care provider.

PHTH 7522. Introduction to Evidence Based Decision Making in Clinical Practice 2 sem. hrs.

Teaches physical therapy students how to provide the best possible care for patients according to an evidence based practice model, which integrates clinical experience, external evidence, and patient expectations. Students will learn how to formulate answerable clinical questions, use online databases to access research evidence, critically evaluate clinical and scientific literature related to patient care, integrate and apply the best evidence for practice, and use these skills to become life long learners. Instruction methods include lectures, in class discussions, hands on activities, and student presentations.

Prereq: Major in Physical Therapy

PHTH 7523. Applied Evidence Based Decision Making 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 and PHTH 7522; and concurrent enrollment in PHTH 7532.

PHTH 7525. 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 7526. Kinesiology 2: The Spine and Lower Extremity 3 sem. hrs.

Continuation of PHTH 7525 with emphasis on head, trunk and lower extremities, including an introduction to normal gait, posture, and surface anatomy. Lecture, demonstration and laboratory practice.

Prereq: PHTH 7525.

PHTH 7528. 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 and BISC 4130 or BISC 2135 and BISC2136.

PHTH 7530. Pain Mechanisms and Treatment 2 sem. hrs.

Lecture and clinical laboratory course (based on research evidence and/or best practice) that presents the principles and methods that lead to clinical outcomes related to pain conditions including the theoretical models for understanding the basis for pain. Content will include pain mechanisms, assessment and physical therapy management.

Prereq: PHTH Major.

PHTH 7532. 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 and PHTH 7525; and concurrent enrollment in PHTH 7526.

PHTH 7533. Orthopedics 2 4 sem. hrs.

Continuation of PHTH 7532 with an emphasis on the evaluation and treatment of specific musculoskeletal injuries/dysfunctions. Includes surgical, non-surgical, traumatic, chronic and sports-related conditions. 7000 level course contains enhanced content.

Prereq: PHTH 7532 and PHTH 7526.

PHTH 7539. 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 7549. Differential Diagnosis of Disease
2 sem. hrs.

Lecture course focusing on a broad range of medical diseases and their various clinical presentations. The focus is on the use of clinical decision making skills when analyzing a patient's medical history intake and the review of systems. The course addresses screening, to include referral for conditions or diseases that are not within a physical therapist's scope of practice. *Prereq: PHTH major.*

PHTH 7555. Life Span Development
2 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 BISC 4130.

PHTH 7558. 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 7560. 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 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 7570. Advanced Biomechanics and
Kinesiology** 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 7577. Wound/Integumentary Physical
Therapy** 2 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 7667. Neurological Rehabilitation 1
2 sem. hrs.

Lecture and discussion-based course covering the pathology, etiology, and epidemiology of common neurological diseases. Clinical presentation, differential diagnosis, evaluation, and medical/surgical interventions for the diseases are the focus of the first of a 2 part course series.
Prereq: PHTH major and successful completion or concurrent enrollment in PHTH 7558.

PHTH 7668. Neurological Rehabilitation 2
4 sem. hrs.

Continuation of Neurological Rehabilitation 1. Lectures and labs focus on physical therapy interventions for specific impairments, disease-specific conditions, and overall function. Evidence-based practice guidelines are utilized when available, objective tests and measures are emphasized, and case studies are utilized to integrate and apply information. *Prereq: PHTH major, successful completion of PHTH 7667 and PHTH 7558.*

**PHTH 7674. Critically Appraising and
Contributing to the Evidence for
Clinical Practice** 1-3 sem. hrs.

Course is a culmination of the skills and knowledge obtained in PHTH 7522 and 7523 and prepares students for leadership roles in physical therapy. Students hone their skills at reading and critically evaluating the clinical and scientific literature. In so doing, student become familiar with the evidence for practice in several emerging areas of physical therapy. Students also learn to lead and participate in journal clubs, provide effective peer review, contribute to the evidence for practice, and communicate novel ideas to the physical therapy community. Instruction methods include lectures, journal clubs, and writing workshops. As a capstone project students will author papers comparable to those seen in the journal of the American Physical Therapy Association and present their work to the physical therapy community. *Prereq: PHTH major and successful completion of PHTH 7522.*

**PHTH 7675. Pediatric Disorders and
Intervention Strategies** 4 sem. hrs.

Lecture/lab/discussion on developmental disabilities and other selected pediatric disorders. Concepts of physical therapy evaluation, assessment, goal setting and treatment of the pediatric patient; common treatment theories and techniques and their application to children. Current cultural, ethical, and legal issues related to health care and children.
Prereq: Must be a 6th year PHTH major.

**PHTH 7682. Cardiovascular and Pulmonary
Physical Therapy** 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. Clinical skills to be taught will be consistent with nationally published Clinical Practice Guidelines that are evidence-based. 7000 level course contains enhanced content. *Prereq: PHTH major; certification in Basic Life Support (CPR).*

**PHTH 7684. Clinical Issues and Decision
Making** 2 sem. hrs.

Lecture course with occasional joint labs with the DPT-5 students during class time. The emphasis of this course is to examine and discuss current issues and trends in physical therapy practice, and to mentor DPT-5 students. Topics include patient and professional advocacy, autonomous practice,

ethics, jurisprudence, reimbursement, applying the Guide to Physical Therapist Practice to a complex multi-system patient case, resume writing, interview skills, and assessment for learning. Additionally, a representative from the Department of Regulation and Licensing will address the licensing process.
Prereq: PHTH 7523.

**PHTH 7932. Advanced Topics in Physical
Therapy** 0-4 sem. hrs.

Advanced clinical electives in specific areas of physical therapy practice. *Prereq: PHTH major; or cons. of instr. 0 credit will be SNC/UNC grade assessment; 1-4 credits will be graded.*

PHTH 7986. Internship in Physical Therapy
4-8 sem. hrs.

Prereq: PHTH major; must be taken in PHTH course sequence.

**PHTH 7995. Independent Study in Physical
Therapy** 1-3 sem. hrs.

Independent study and research in special areas of interest in physical therapy under faculty supervision. Offered every term. No mid-term assessment assigned. *Prereq: PHTH major, cons. of instr., and cons. of dept. ch.*

ATHLETIC TRAINING

**ATTR 1020. 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 2130. 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. Anatomy and physiology. *Prereq: EXSC 2115, which may be taken concurrently, and cons. of instr.*

ATTR 2131. 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: ATTR 2130 and cons. of instr.

ATTR 2150. Therapeutic Modalities 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: ATTR 2131 and cons. of instr.*

ATTR 2931. 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.*

**ATTR 2981. Clinical Proficiencies in Athletic
Training** 1 1 sem. hr.

Clinical psychomotor skills related to emergency care, taping, equipment fitting and prevention of injury will be assessed in the clinical environment. S/U grade assessment. *Prereq: ATTR 1020.*

ATTR 2982. Clinical Proficiencies in Athletic Training 2 1 sem. hr.

Clinical psychomotor skills related to evaluation of the lower extremity will be assessed in the clinical environment. S/U grade assessment.

Prereq: ATTR 2981 and ATTR 2130.

ATTR 3160. Rehabilitative/Therapeutic Exercise in Athletic Training 2 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:* ATTR 2131.

ATTR 3170. General Medicine in Athletic Training 3 3 sem. hrs.

Lecture/lab. This course is designed to describe and assess common general medical conditions seen in athletics and includes: common ear and mouth pathologies, description of and assessment of respiratory conditions, common conditions such as diabetes mellitus, urinary tract infections, reproductive abnormalities and viral/infective disorders will be discussed. Common clinical skills (auscultation, vital signs, otoscope, chemstrips, ocular motor function spirometry) will be demonstrated and mastered. *Prereq:* ATTR 2131; or ATTR 2150; or cons. of instr.

ATTR 3983. Clinical Proficiencies in Athletic Training 3 1 sem. hr.

Clinical psychomotor skills related to evaluation of the upper extremity, spine, and those relating to the application of the therapeutic modalities will be assessed in the clinical environment. S/U grade assessment. *Prereq:* ATTR 2982 and ATTR 2131 and ATTR 2150.

ATTR 3984. Clinical Proficiencies in Athletic Training 4 1 sem. hr.

Clinical psychomotor skills related to therapeutic exercise will be assessed in the clinical environment. S/U grade assessment. *Prereq:* ATTR 3983 and ATTR 3160.

ATTR 3985. Clinical Proficiencies in Athletic Training 5 1 sem. hr.

Clinical psychomotor skills related to general medical principles, psychosocial intervention, health care administration, exercise program management, and selected special topics will be assessed in the clinical environment. S/U grade assessment. *Prereq:* ATTR 3170 and EXSC 3170, which may be taken concurrently; or ATTR 3984 and PHTH 7513, which may be taken concurrently.

ATTR 4986. 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. Current CPR and First Aid certifications. S/U grade assessment. *Prereq:* Sr. stndg., ATTR major, cons. of dept. ch., and cons. of program director.

ATTR 4995. Independent Study in Athletic Training 1-4 sem. hrs.

Independent Study. *Prereq:* Cons. of instr.

EXERCISE SCIENCE**EXSC 1001. 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 1010. 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 1050. 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 2106. Cognitive and Motor Learning 3 sem. hrs.

Lecture/lab. A study of the principles of human motor learning development from infancy through adulthood. Instructional emphasis is given to those factors which have implications for exercise and training.

EXSC 2110. 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:* EXSC 1050, EXSC 2115, and BISC 1015 must be completed with a grade of C or better prior to enrolling in this course.

EXSC 2115. Exercise Physiology and Bioenergetics 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 1015 and CHEM 1001 and CHEM 1002 which may be taken concurrently.

EXSC 2190. 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 2115.

EXSC 2931. 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.

EXSC 3100. 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 2110 and EXSC 2115; and a course in anatomy and physiology.

EXSC 3170. Exercise Program Management 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 3180. 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 2115.

EXSC 3187. Exercise Science 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 2115 and EXSC 3180.

EXSC 3189. Nutrition and Exercise Performance 3-4 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: EXSC 2115.

EXSC 3986. 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. May be dependent on space. Current CPR and First Aid certifications. S/U grade assessment. *Prereq:* Jr. stndg., EXSC major; EXSC 3100, which may be taken concurrently, EXSC 2110, EXSC 2115, and EXSC 2190, which may be taken concurrently.

EXSC 4192. 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., EXSC major, EXSC 2115, and anatomy and physiology; or cons. of instr.

EXSC 4986. 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. May be dependent on space. S/U grade assessment. *Prereq:* Cons. of program dir.; Sr. stndg.; EXSC major; current CPR and First Aid certifications; satisfactory completion of all EXSC major course work with a grade of C or better.

EXSC 4995. Independent Study in Exercise Science 1-4 sem. hrs.

Independent study under the direction of faculty. *Prereq:* Cons. of instr.

PHYSICIAN ASSISTANT STUDIES (PHAS)

Interim Chairperson: Halula

Assistant Professor: Bril, Ceelen, Fischer, Loftis, Paxton, 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 4117. 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 7040. Medical Terminology 1 sem. hr.

Introduction to the medical language, including diagnostics and pharmacology. *Prereq:* Admission to professional phase of Physician Assistant Studies.

PHAS 7050. 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 7080. 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 Web browsers and electronic mail technologies. Completing the course requires an online 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 7997. *Prereq:* PHAS major; admitted to professional phase of Physician Assistant Studies.

PHAS 7090. Introduction to Primary Medicine 3 sem. hrs.

Introduction to preventative medicine health care. Attention given to health care screening guidelines and treatment protocols throughout the life cycle with some emphasis on the unique needs of diverse and underserved patient populations. *Prereq:* Admission to professional phase of physician assistant program.

PHAS 7110. 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 7111. Primary Medicine 2 5 sem. hrs.

This course is a continuation of PHAS 7110. 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 7115. Clinical Decision Making 1 4 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 7116. Clinical Decision Making 2 1 sem. hr.

Clinical experience as patient advocate among underserved. *Prereq:* Admitted to professional phase of Physician Assistant Studies.

PHAS 7117. 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 7200. Interpersonal Aspects of Patient Care 1 sem. hr.

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 psychosocial 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 7220. Clinical Pharmacology 3 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, BISC 7120, and admitted to the professional phase of Physician Assistant Studies.

PHAS 7230. 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 professional phase of Physician Assistant Studies.

PHAS 7235. 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 7240. Clinical Procedures 2 sem. hrs.

This course is a hands on course that instructs students in the common Outpatient and Inpatient medical procedures performed routinely by PA's. This includes injections, IV's, foreign body removal, I&D and other intricate procedures. *Prereq:* Admitted to the professional phase of Physician Assistant Studies.

PHAS 7245. 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 7250. 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 7255. Women's Health 2 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 7260. 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 7265. Practice Management and Health Care Systems 1 sem. hr.

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 7270. Diagnostics Technology

4 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 7110, 7111, 7115, 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, hypertrophy (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 7931. Topics in Physician Assistant Studies 1-6 sem. hrs.

Used for special topics course

PHAS 7986. Internship in Physician Assistant Studies 3-6 sem. hrs.

Prereq: PHAS major; admitted to professional phase of Physician Assistant Studies.

PHAS 7995. Independent Study in Physician Assistant Studies 1-6 sem. hrs.

Prereq: Admitted to professional phase of Physician Assistant Studies.

PHAS 7997. Master's Capstone 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 the 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.

SPEECH PATHOLOGY AND AUDIOLOGY (SPPA)

Chairperson and Associate Professor: Korabic
Professor Emeritus: Trotter

Associate Professor Emerita: Moller
Associate Professor: Bhatnagar, Long
Assistant Professor: Berry, Gorman, Moyle
Clinical Instructors: Berman, Brueck, Erdman, Hallen, Krueger, Puglisi-Creegan
Coordinator of Clinical Services: Podewils
Director of M.S. Program: Long

SPPA 1001. Introduction to Speech-Language Pathology and Audiology

3 sem. hrs.

An introduction to the disorders of speech, language, and hearing with emphasis on types, etiology, and symptoms. Offered every term.

SPPA 1100. Anatomy and Physiology of the Speech Mechanism 3 sem. hrs.

Anatomy and physiology of the speech production mechanism, including bases for phonation, articulation, breathing, and neural control.

Prereq: SPPA major; or SPPA minor; or SPLA major; or cons. of dept. ch.

SPPA 2120. Phonetics and Phonology

3 sem. hrs.

Introduction to the study of speech sound production. Descriptive systems for characterizing production of speech sounds and speech errors. Phonetic transcription of normal and disordered speech. Phonetic variation associated with dialects of English. Manual and computerized methods of phonological analysis. Offered fall term.

Prereq: SPPA major; or SPPA minor; or SPLA major; or cons. of dept. ch.

SPPA 2130. Child Language Development

3 sem. hrs.

Overview of general linguistic concepts and their application to the acquisition of language by young children. Stages of language development from infancy to early school age. Contributions of biological, social, linguistic, and cognitive factors to language learning. The role of input from conversation and media sources. Offered fall term. *Prereq:* SPPA major; or SPLA major; or cons. of dept. ch.

SPPA 2210. Child Language Disorders

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 1001 and SPPA 2130; or SPLA major and SPPA 1001 and SPPA 2130; or cons. of dept. ch.

SPPA 2220. Child Speech Sound Disorders

3 sem. hrs.

Overview of normal speech sound development and characterization of children with speech sound disorders. Introduction to methods of standardized testing, linguistic assessment, and treatment of speech sound disorders. Dialectal variation and its effect on clinical procedures. Offered spring term.

Prereq: SPPA major and SPPA 1001 and SPPA 2120 and SPPA 1100; or SPLA major and SPPA 1001 and SPPA 2120 and SPPA 1100; or cons. of dept. ch.

SPPA 3140. Speech Science 3 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 1100; or SPLA major and SPPA 1100; or cons. of dept. ch.

SPPA 3510. 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 term. *Prereq:* SPPA major and SPPA 1100 and SPPA 3140; or SPLA major and SPPA 1100 and SPPA 3140; or cons. of dept. ch.

SPPA 3710. Intervention Methods in Speech-Language Pathology 3 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: Cons. of dept. ch.; and SPPA major and SPPA 2220; or SPLA major and SPPA 2220; SPPA 3964 must be taken concurrently.

SPPA 3964. Practicum in Speech-Language Pathology 1: Campus Clinic 1 sem. hr.

Offered every term. S/U grade assessment.

Prereq: SPPA major; or SPLA major; or cons. of dept. ch.; SPPA 3710 must be taken concurrently.

SPPA 4230. Stuttering and Other Fluency Disorders 3 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 1001; or SPLA major and SPPA 1001; or cons. of dept. ch.

SPPA 4310. Introduction to Neurological Disorders 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 1100; or SPLA major and SPPA 1100; or cons. of dept. ch.

SPPA 4520. Hearing Disorders 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 3510; or SPLA major and SPPA 3510; or cons. of dept. ch.

SPPA 4530. Audiology 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 4520; or SPLA major and SPPA 4520; or cons. of instr. and cons. of dept. ch.

SPPA 4610. Multicultural Issues for Speech-Language Pathologists 3 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. stndg.*

SPPA 4720. 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.

Prereq: SPLA student standing or cons. of dept. ch.

SPPA 4961. Special Institute/Workshop/Project 1-3 sem. hrs.

Project 1-3 sem. hrs.

SPPA 4964. Practicum in Speech-Language Pathology 2: Campus Clinic 1 sem. hr.

Offered every term. S/U grade assessment.

Prereq: SPPA major and SPPA 3964; or SPLA major and SPPA 3964; or SPPA 3964 and cons. of dept. ch.

SPPA 4965. Practicum in Audiology: Campus Clinic 1 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. S/U grade assessment.

Prereq: SPPA major and SPPA 3510 and cons. of instr.; or SPLA major and SPPA 3510 and cons. of instr.; or cons. of instr. and cons. of dept. ch.

SPPA 4995. Independent Study in Speech-Language Pathology and Audiology

1-3 sem. hrs.

Prereq: Cons. of dept. ch.

SPPA 4999. 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 essential to preparation for professional nursing practice. This preparation includes liberal and professional knowledge; clinical, cognitive and leadership skills; and personal and professional values.

DEGREES OFFERED

Marquette University confers the degree bachelor of science in nursing on those students who have satisfactorily completed the prescribed curriculum of the College of Nursing.

The degrees master of science in nursing, doctor of philosophy, and doctor of nursing practice 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 and follows the prescribed program plan.

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 GPA 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 grade point average per term actually taken at Marquette.

UNIVERSITY CORE OF COMMON STUDIES AND COLLEGE CURRICULUM REQUIREMENTS

The College of Nursing builds on the foundational educational experience provided by the University Core of Common Studies. It does this through a college curriculum that amplifies and deepens the knowledge, skills, and values imparted to students in the nine knowledge areas of the UCCS. Nursing students are required to complete 128 credits for the Bachelor of Science in Nursing Degree.

| | |
|---|--------------------|
| Rhetoric (R) ENGL 1001 and ENGL 1002 ARE REQUIRED. | 6 credits |
| Mathematical Reasoning (MR) All UCCS courses accepted; Statistics recommended for students considering graduate education. | 3 credits |
| Individual and Social Behavior (ISB) PSYC 1001, PSYC 2101, and SOCI 2200 ARE REQUIRED. | 9 credits |
| Diverse Cultures (DC) HEAL 1025* IS REQUIRED. | 3 credits |
| Literature and Performing Arts (LPA) All UCCS courses accepted for college curriculum credit. | 3 credits |
| Histories of Cultures and Societies (HCS) All UCCS courses accepted for college curriculum credit. | 3 credits |
| Science and Nature (SN) BISC 1015 IS REQUIRED. | 5 credits |
| Human Nature and Ethics (HNE) PHIL 1001 and PHIL 2310 ARE REQUIRED. | 6 credits |
| Theology (T) THEO 1001 IS REQUIRED, and all UCCS courses accepted for remaining 3 credits. | 6 credits |
| General Electives | 3 credits |
| Other Required Science Courses BISC 1060, BISC 2070, and BISC 3115. | 9 credits |
| Nursing Major NURS 1000, 2000, 2075, 2100, 3100, 2110, 3200, 3300 3301, 3150, 3400 3401, 3500, 3501, 4300, 4301, 4400 4401, 4500 4501, 4601, 4650, any NURS/HEAL elective, and HEAL 1025, 2045. | 75 credits* |

*HEAL 1025 satisfies both UCCS and college curriculum requirements.

▲ Indicates UCCS courses in course descriptions.

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 requiring some summer course work. 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.

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 1060 – Chemistry for Health Professions
 BISC 2070 – Biochemistry
 BISC 1015 – Principles of Human Anatomy and Physiology
 PSYC 1001 – General Psychology
- b. A grade of C or better is required in the following courses:
 BISC 3115 – Microbiology
 PSYC 2101 – Introduction to Life-span Developmental Psychology
 PHIL 2310 – Theory of Ethics
 SOCI 2200 – The Family (sociology)
- c. A grade of C or better (or S where applicable) in **all** required NURS and HEAL courses.
- d. A grade of D or better is required for all other required courses not listed above.
- e. Students must have a 2.000 cumulative grade point average to enroll in NURS 2000 or NURS 2075 and to continue to progress in the nursing program.
- f. Any I, X, IX grade which is not removed by the required time (see academic calendar) will be viewed as an F.
- g. 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.
- h. No required cognate or required nursing course may be repeated more than one time.
- i. Permission to repeat a required nursing course must be formally requested from the associate dean for undergraduate programs by the student, before beginning the repeated course.
- j. All students are required by the Undergraduate Program and Curriculum Committee to complete external, standardized, comprehensive nursing examinations as a condition of graduation. (Fee required for these examinations.)
- k. Students must meet health requirements as specified in the *Health Requirements for Undergraduate Students* found in this bulletin.
- l. Health reports, criminal background check 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.
- m. The college has additional limitations for substitute repeat courses. (See *College of Nursing Undergraduate Student Handbook*.)

PROGRESSION INTO NURS 2000

The following required courses or their equivalents must be completed prior to entering NURS 2000: BISC 1060 Chemistry for the Health Professions, BISC 2070 Biochemistry, BISC 1015 Principles of Anatomy and Physiology, PSYC 1001 General Psychology, NURS 1000 Dimensions of Professional Nursing; NURS 1000 (may be taken concurrently).

PROGRESSION INTO NURS 2075

The following required courses or their equivalents must be completed prior to entering NURS 2075: NURS 2000 Health Assessment, BISC 3115 Microbiology and HEAL 2045 Normal and Therapeutic Nutrition.

PROGRESSION INTO NURS 3100 THROUGH NURS 3501

The following required courses or their equivalents must be completed prior to entering courses NURS 3100 through NURS 3501: NURS 2075 Foundations of Nursing Practice, NURS 2100 Pathophysiology 1, NURS 2110 Pharmacotherapeutics for Nursing Practice, HEAL 1025 Culture and Health, PSYC 2101 Introduction to Life-span Developmental Psychology, SOCI 2200 The Family.

PROGRESSION INTO NURS 4300 OR HIGHER NURSING COURSES

The following required cognate and nursing courses or their equivalents must be completed prior to entering NURS 4300 or higher nursing courses: NURS 3100 Pathophysiology 2, NURS 3200 Introduction to Nursing Research, NURS 3300 Nursing Care of Adults: Theory, NURS 3301 Nursing Care of Adults: Practicum, NURS 3400 Childbearing Family Nursing: Theory, NURS 3401 Childbearing Family Nursing: Practicum, NURS 3150 Essentials of Gerontological Nursing, NURS 3500 Mental Health Nursing: Theory, NURS 3501 Mental Health Nursing: Practicum.

All other required courses must be completed prior to graduation.

WITHDRAWAL FROM THE NURSING PROGRAM

The following criteria are used in requiring a student to 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. See the Appeals Procedure section for a description of the procedure for appealing a termination decision.

ATTENDANCE

Attendance is mandatory in all scheduled classes and practica. (See Marquette University College of Nursing *Handbook* for further information.) In the event of absence, progress and continuation in the course may be at risk and 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 may 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 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

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

The written appeal must be submitted to the associate dean of the undergraduate program. The written appeal must provide the reason(s) the student believes the recorded grade is incorrect. The student may present evidence of his/her performance and may also request that all other pertinent materials be supplied by the instructor. The associate dean will collect and analyze the evidence in a timely manner. Evidence will be gathered through consultations with the instructor, the student and any witnesses. These consultations may be in person, by phone or by electronic means. Hard copies of relevant documents may also be requested. The associate dean will evaluate the appeal or choose to designate an ad hoc committee for this purpose.

If an ad hoc committee is appointed they will:

- a. consider written course work
- b. consult with the faculty member
- c. consult with the student
- d. deliberate in closed sessions, and
- e. make a recommendation regarding the appeal to the Associate Dean

The associate dean, or ad hoc committee, will consider the appeal and evidence and make one of the following decisions: the assigned grade should remain; the course instructor is asked to reconsider the grade in light of information collected and the reconsidered grade will stand; or a grade change is warranted. The decision will be communicated in writing within 30 days to the student and the instructor with copies of the formal response placed in the student's file and forwarded to the dean and any indicated grade changes filed with the registrar.

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

TERMINATION FROM THE PROGRAM

If a student does not meet criteria for progression the student will be required to withdraw or be terminated from the College of Nursing. A student who is asked to terminate from the program may submit a petition, in writing, to the Undergraduate Program and Curriculum Subcommittee on Progression requesting exemption from the stated policies or regulations of the program. The student is expected to identify the **unique, unusual or uncontrollable** circumstances which led to the petition and to formulate a plan to resolve issues. The petition is to be submitted within 10 days of notification of termination and before late registration. A student may petition the committee only once for a specific situation.

Once a decision has been made by the committee regarding the student's petition, a recommendation will be forwarded to the associate dean for undergraduate programs. The associate dean for undergraduate programs will make a decision based on the student's record and the committee's recommendation. The student will be notified of the associate dean's decision. If the student is dissatisfied with this decision, the final recourse within the College of Nursing is a petition to the dean.

APPROVAL OF COURSES TAKEN ELSEWHERE

Except under special circumstances, students are not allowed to take courses at another institution during a semester they are enrolled at Marquette University. In such circumstances, the approval of the Associate Dean for Undergraduate Programs must be obtained before the course begins.

Students desiring to take summer courses at colleges or universities other than Marquette and transfer such courses toward their degree requirements at Marquette must first secure approval from the Associate Dean or Academic Advising Coordinator for Undergraduate Programs. The procedure and form may be obtained at the college office. Forms must be completed by the student and approved by the Associate Dean or Academic Advising Coordinator **prior** to the student enrolling for courses. If prior approval is not obtained, there is **no guarantee** that credits earned will be accepted by Marquette University. Students must earn a grade of at least C in order for the course to be transferable. Transcripts with the school seal must be sent directly from the school in which the course(s) are taken to the Marquette University Office of The Registrar after successfully completing the course. Normally, such transcripts should be received before the student enrolls for the next semester at Marquette. If a student takes approved course work at another institution at any time during their Marquette career, **particularly in their final semester at Marquette**, the final transcripts must be received by Marquette by the “last day to receive official transcripts”, as listed on the academic calendar in order to graduate.

SPECIAL AND HEALTH REQUIREMENTS

Prior to beginning clinical 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 advanced practice 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. 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.
- G. In order to participate in clinical courses 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.) Students will not be permitted in clinical courses if TB documentation expires.
- H. 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.)

As students progress through their clinical practicum courses they may be required to meet other screening tests as specified by clinical agencies.

Health requirements for RN students must be completed prior to enrollment in NURS 4501.

CPR CERTIFICATION

Prior to entering any clinical practicum course students must provide evidence of current CPR certification, including infant, child, adult (two person and obstructed airway resuscitation). This certification must be maintained throughout the remainder of the student's program through recertification every two years. Documentation of such certification from the American Heart Association "Healthcare Provider BLS" which includes AED is required and must be submitted to the Office of the Associate Dean for Undergraduate Programs, Clark Hall, 251. (Red Cross not accepted.) Questions regarding CPR certification should be directed to this office, 288-3809.

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.

ACCREDITING COMMISSION

Verification of accreditation status may be obtained from The Commission on Collegiate Nursing Education; 1 DuPont Circle NW; Washington, DC 20036-1120; (202) 887-6791.

STUDENT ORGANIZATIONS

COLLEGE ORGANIZATION AND PROFESSIONAL ASSOCIATION

The Marquette University College of Nursing Student Nurses Association (MUSNA) functions as a liaison between the college and the Marquette University Student Government. It coordinates and promotes student activities within the college. The Association also is the university chapter of the Wisconsin Student Nurses Association, a constituent organization of the National Student Nurses Association.

HONOR SOCIETY

Sigma Theta Tau, International is an international professional honor society with constituent chapters in collegiate schools of nursing. The Delta Gamma Chapter at the College of Nursing is open to students, faculty, and community leaders. Candidates enrolled in the College of Nursing must have junior or senior standing and are selected on the basis of superior scholastic achievement, potential leadership qualities and desirable personal qualifications.

Faculty and registered nurses in the community are selected on the basis of special interest in Sigma Theta Tau, International and marked achievement in the field of nursing.

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. |
|------------|-----------|------------------|-----------|
| NURS 1000* | 3 | BISC 2070* | 3 |
| BISC 1060* | 3 | BISC 1015*+ | 5 |
| ENGL 1001+ | 3 | ENGL 1002+ | 3 |
| PSYC 1001+ | 3 | PHIL 1001+ | 3 |
| THEO 1001+ | 3 | General elective | 3 |
| | 15 | | 17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------|-----------|----------------------|-----------|
| PSYC 2101+ | 3 | NURS 2075* | 3 |
| BISC 3115* | 3 | NURS 2100* | 3 |
| HEAL 1025+ | 3 | NURS 2110* | 3 |
| HEAL 2045* | 3 | SOCI 2200+ | 3 |
| NURS 2000* | 3 | HIST UCCS (History)+ | 3 |
| | 15 | | 15 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------|-----------|-------------------|-----------|
| NURS 3100* | 3 | NURS 3400 | 3 |
| NURS 3200 | 3 | NURS 3401 | 3 |
| NURS 3300 | 3 | NURS 3500 | 3 |
| NURS 3301 | 3 | NURS 3501 | 3 |
| NURS 3150 | 3 | MATH UCCS (Math)+ | 3 |
| PHIL 2310+ | 3 | | |
| | 18 | | 15 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|-----------------------|-----------|
| NURS 4400 | 3 | NURS 4300 | 3 |
| NURS 4401 | 3 | NURS 4301 | 3 |
| NURS 4500 | 3 | NURS 4601 | 3 |
| NURS 4501 | 3 | NURS 4650 | 3 |
| NURS Nursing or Health elective | 3 | THEO UCCS (Theology)+ | 3 |
| LPA UCCS (Literature or Performing Arts)+ | 3 | | |
| | 18 | | 15 |

Total Credits: 128
(Nursing = 75 and Non-nursing = 53)

* Courses offered only in the semester indicated.

+UCCS Courses

Students may take summer clinical courses only with Associate Dean's permission, enrollment limited

During junior and senior year, first and second term courses could alternate based on students individualized program plan

BACHELOR OF SCIENCE IN NURSING: AIR FORCE ROTC CURRICULUM

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------|-----------|----------------------|-----------|
| NURS 1000* | 3 | BISC 2070* | 3 |
| BISC 1060* | 3 | BISC 1015*+ | 5 |
| ENGL 1001+ | 3 | ENGL 1002+ | 3 |
| PSYC 1001+ | 3 | PHIL 1001+ | 3 |
| THEO 1001+ | 3 | AFAS 1012* | 1 |
| AFAS 1011* | 1 | AFAS 1051 | 0 |
| AFAS 1051 | 0 | HIST UCCS (History)+ | 3 |
| | <hr/> 16 | | <hr/> 18 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------|-----------|-------------|-----------|
| NURS 2000* | 3 | NURS 2075* | 3 |
| HEAL 2045* | 3 | NURS 2100* | 3 |
| BISC 3115* | 3 | NURS 2110* | 3 |
| SOCI 2200+ | 3 | HEAL 1025+ | 3 |
| MATH UCCS (Math)+ | 3 | PSYC 2101+ | 3 |
| AFAS 2021* | 1 | AFAS 2022* | 1 |
| AFAS 1051 | 0 | AFAS 1051 | 0 |
| | <hr/> 16 | | <hr/> 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------|-----------|-------------|-----------|
| NURS 3100* | 3 | NURS 3200 | 3 |
| NURS 3400 | 3 | NURS 3300 | 3 |
| NURS 3401 | 3 | NURS 3301 | 3 |
| NURS 3500 | 3 | PHIL 2310+ | 3 |
| NURS 3501 | 3 | NURS 3150 | 3 |
| AFAS 3131* | 3 | AFAS 3132* | 3 |
| AFAS 1051 | 0 | AFAS 1051 | 0 |
| | <hr/> 18 | | <hr/> 18 |

Summer

| | SEM. HRS. |
|--|-----------|
| NURS 4601 | 3 |
| (register in fall term of senior year) | 3 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|---|-----------|
| NURS 4300 | 3 | NURS 4400 | 3 |
| NURS 4301 | 3 | NURS 4401 | 3 |
| NURS 4650 | 3 | NURS 4500 | 3 |
| NURS Nursing or Health Elective | 3 | NURS 4501 | 3 |
| THEO UCCS (Theology)+ | 3 | LPA UCCS (Literature or Performing Arts)+ | 3 |
| AFAS 4141* | 3 | AFAS 4142* | 3 |
| AFAS 1051 | 0 | AFAS 1051 | 0 |
| | <hr/> 18 | | <hr/> 18 |

Total Credits: 141

*Courses offered only in semester indicated

+UCCS Courses

Students may take summer clinical courses only with Associate Dean's permission, enrollment limited

BACHELOR OF SCIENCE IN NURSING: ARMY ROTC CURRICULUM

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------|-----------|-------------------|-----------|
| NURS 1000* | 3 | BISC 2070* | 3 |
| BISC 1060* | 3 | BISC 1015*+ | 5 |
| ENGL 1001+ | 3 | ENGL 1002+ | 3 |
| PSYC 1001+ | 3 | PHIL 1001+ | 3 |
| THEO 1001+ | 3 | MATH UCCS (Math)+ | 3 |
| MISL 1001* | 1 | MISL 1002* | 1 |
| MISL 1100 | 1 | MISL 1200 | 1 |
| | 17 | | 19 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------|-----------|-------------|-----------|
| NURS 2000* | 3 | NURS 2075* | 3 |
| HEAL 2045* | 3 | NURS 2100* | 3 |
| BISC 3115* | 3 | NURS 2110* | 3 |
| PSYC 2101+ | 3 | HEAL 1025+ | 3 |
| MISL 1800+* | 3 | SOCI 2200+ | 3 |
| MISL 2001* | 1 | MISL 2002* | 1 |
| MISL 2100* | 2 | MISL 2200* | 2 |
| | 18 | | 18 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------|-----------|-------------|-----------|
| NURS 3100* | 3 | NURS 3200 | 3 |
| NURS 3400 | 3 | NURS 3300 | 3 |
| NURS 3401 | 3 | NURS 3301 | 3 |
| NURS 3500 | 3 | NURS 3150 | 3 |
| NURS 3501 | 3 | PHIL 2310+ | 3 |
| MISL 3001* | 1 | MISL 3002* | 1 |
| MISL 3100* | 2 | MISL 3200* | 2 |
| MISL 3101* | 1 | MISL 3202* | 1 |
| | 19 | | 19 |

Summer

| FIRST TERM | SEM. HRS. |
|--|-----------|
| NURS 4601 Synthesis Practicum | 3 |
| (register in fall term of senior year) | 3 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------|-----------|---|-----------|
| NURS 4400 | 3 | NURS 4300 | 3 |
| NURS 4401 | 3 | NURS 4301 | 3 |
| NURS 4500 | 3 | NURS 4650 | 3 |
| NURS 4501 | 3 | NURS or HEAL elective | 3 |
| THEO UCCS (Theology)+ | 3 | LPA UCCS (Literature or Performing Arts)+ | 3 |
| MISL 4001* | 1 | MISL 4002* | 1 |
| MISL 4100* | 2 | MISL 4200* | 2 |
| MISL 4101* | 0 | MISL 4202* | 0 |
| | 18 | | 18 |

Total Credits: 149

*Courses offered only in semester indicated

+UCCS Courses

Students may take summer clinical courses only with Associate Dean's permission, enrollment limited

BACHELOR OF SCIENCE IN NURSING: NAVY ROTC CURRICULUM

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------|-----------|-------------|-----------|
| NURS 1000* | 3 | BISC 2070* | 3 |
| BISC 1060* | 3 | BISC 1015*+ | 5 |
| ENGL 1001+ | 3 | ENGL 1002+ | 3 |
| PSYC 1001+ | 3 | PHIL 1001+ | 3 |
| THEO 1001+ | 3 | NASC 1001 | 0 |
| NASC 1001 | 0 | NASC 1022* | 3 |
| NASC 1009* | 2 | | |
| | 17 | | 17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|-------------|-----------|
| NURS 2000* | 3 | NURS 2075* | 3 |
| HEAL 1025+ | 3 | NURS 2100* | 3 |
| HEAL 2045* | 3 | NURS 2110 | 3 |
| BISC 3115* | 3 | PSYC 2101+ | 3 |
| NASC 1001 | 0 | SOCL 2200+ | 3 |
| NASC 1185* | 3 | NASC 1001 | 0 |
| Naval Science Cultural Awareness Elective | 3 | | |
| | 18 | | 15 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------|-----------|-------------------|-----------|
| NURS 3100* | 3 | NURS 3400 | 3 |
| NURS 3200 | 3 | NURS 3401 | 3 |
| NURS 3300 | 3 | NURS 3500 | 3 |
| NURS 3301 | 3 | NURS 3501 | 3 |
| NURS 3150 | 3 | MATH UCCS (Math)+ | 3 |
| PHIL 2310+ | 3 | | |
| NASC 1001 | 0 | | |
| | 18 | | 15 |

Summer

| FIRST TERM | SEM. HRS. |
|--|-----------|
| NURS 4601 Synthesis Practicum | 3 |
| (register in fall term of senior year) | 3 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---|-----------|-----------------------|-----------|
| NURS 4300 | 3 | NURS 4400 | 3 |
| NURS 4301 | 3 | NURS 4401 | 3 |
| NURS Nursing or Health Elective. | 3 | NURS 4500 | 3 |
| LPA UCCS (Literature or Performing Arts)+ | 3 | NURS 4501 | 3 |
| NASC 1001 | 0 | NASC 2186* | 3 |
| NURS 4650 | 3 | THEO UCCS (Theology)+ | 3 |
| | 15 | | 18 |

Total Credits: 136

*Courses offered only in semester indicated

+UCCS Courses

Fall and Spring courses will depend on drill assignments, see advisor.

Students may take summer clinical courses only with Associate Dean's permission, enrollment limited

BACHELOR OF SCIENCE IN NURSING/PSYCHOLOGY DOUBLE MAJOR CURRICULUM

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------|-----------|-------------|-----------|
| NURS 1000* | 3 | BISC 2070* | 3 |
| BISC 1060* | 3 | BISC 1015+* | 5 |
| ENGL 1001+ | 3 | ENGL 1002+ | 3 |
| PSYC 1001+ | 3 | PHIL 1001+ | 3 |
| THEO 1001+ | 3 | HEAL 1025+ | 3 |
| | 15 | | 17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-------------------|-----------|--------------------|-----------|
| NURS 2000* | 3 | NURS 2075* | 3 |
| PSYC 2001+ | 3 | NURS 2100* | 3 |
| PSYC 2101+ | 3 | NURS 2110 | 3 |
| HEAL 2045* | 3 | PSYC 2050** | 4 |
| BISC 3115* | 4 | SOCI 2200+ | 3 |
| | 16 | | 16 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-----------|-----------------------------------|-----------|
| NURS 3100* | 3 | NURS 3300 | 3 |
| NURS 3400 | 3 | NURS 3301 | 3 |
| NURS 3401 | 3 | NURS 3150 | 3 |
| NURS 3500 | 3 | PSYC Elective | 3 |
| NURS 3501 | 3 | PSYC Elective | 3 |
| PSYC Required content area | 3 | PSYC Required content area | 3 |
| | 18 | | 18 |

Summer

| | SEM. HRS. |
|-----------|-----------|
| NURS 4400 | 3 |
| NURS 4401 | 3 |
| | 6 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|-----------------------------------|-----------|---|-----------|
| NURS 4500 | 3 | NURS 4300 | 3 |
| NURS 4501 | 3 | NURS 4301 | 3 |
| NURS/HEAL Elective | 3 | NURS 4601 | 3 |
| PSYC Required content area | 3 | NURS 4650 | 3 |
| PHIL 2310+ | 3 | LPA UCCS (Literature or Performing Arts)+ | 3 |
| HIST UCCS (History)+ | 3 | THEO UCCS (Theology)+ | 3 |
| | 18 | | 18 |

Total Credits: 139

*Courses offered only in semester indicated

+UCCS Courses

**PSYC 2050 satisfies the Nursing Research requirement (NURS 3200)

Bold indicates psychology major required course.

Students may take summer clinical courses only with Associate Dean's permission, enrollment limited

Nursing and Psychology Major: 35 hours including PSYC 1001, 2001 and 2050; and at least 1 course from at least 5 of the following 8 content areas: Developmental (2101); Social (3201 or 3230); Cognitive Science (4330, 3301 or 3320); Assessment (3701 or 4701); History and Systems (4801); Personality Theories (3501); Physiological (3601); and Abnormal (NURS 3500 and 3501); 3 credits of the Mental Health lecture/practicum count toward Abnormal content; the other 3 credits count as PSYC 4964 for psychology elective. Additionally, 6 credits from psychology electives are required.

HONORS BACHELOR OF SCIENCE IN NURSING CURRICULUM

Freshman

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------|-----------|--------------|-----------|
| NURS 1000* | 3 | BISC 2070* | 3 |
| BISC 1060* | 3 | BISC 1015+* | 5 |
| ENGL 1001+** | 3 | ENGL 1302+** | 3 |
| PSYC 1001+ | 3 | PHIL 1001+** | 3 |
| HIST 1001+** | 3 | THEO 1001+** | 3 |
| HOPR 1953 | 1 | | |
| | 16 | | 17 |

Sophomore

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|------------|-----------|--------------|-----------|
| NURS 2000* | 3 | NURS 2075* | 3 |
| HEAL 1025+ | 3 | NURS 2100* | 3 |
| HEAL 2045* | 3 | NURS 2110 | 3 |
| BISC 3115* | 3 | SOCI 2200+ | 3 |
| PSYC 2101+ | 3 | HIST 1002+** | 3 |
| HOPR 2953 | 2 | | |
| | 17 | | 15 |

Junior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|--------------|-----------|-------------------|-----------|
| NURS 3100* | 3 | NURS 3400 | 3 |
| NURS 3200 | 3 | NURS 3401 | 3 |
| NURS 3300 | 3 | NURS 3500 | 3 |
| NURS 3301 | 3 | NURS 3501 | 3 |
| NURS 3150 | 3 | MATH UCCS (Math)+ | 3 |
| PHIL 2310+** | 3 | HOPR 3953/3955 | 3 |
| | 18 | | 18 |

Senior

| FIRST TERM | SEM. HRS. | SECOND TERM | SEM. HRS. |
|---------------------------------|-----------|-------------------------|-----------|
| NURS 4400 | 3 | NURS 4300 | 3 |
| NURS 4401 | 3 | NURS 4301 | 3 |
| NURS 4500 | 3 | NURS 4601 | 3 |
| NURS 4501 | 3 | NURS 4650 | 3 |
| NURS Nursing or Health Elective | 3 | THEO UCCS (Theology)+** | 3 |
| | | HOPR | 3 |
| | 15 | | 18 |

Total Credits: 134

*Courses offered only in semester indicated

**Students must take Honors Level section

+UCCS Courses

Students may take summer clinical courses only with Associate Dean's permission, enrollment limited

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 1025+ | Culture and Health | 3 |
| NURS 3200 | Introduction to Nursing Research | 3 |
| NURS 4050/5040 | Health Assessment for Registered Nurses | 3 |
| NURS 2173 | Professional Issues in Nursing | 3 |
| Total | | 12 |

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 1000 | Dimensions of Professional Nursing | 3 |
| HEAL 2045 | Normal and Therapeutic Nutrition | 3 |
| NURS 2075 | Foundations of Nursing Practice | 3 |
| NURS 2100 | Pathophysiology 1 | 3 |
| NURS 3100 | Pathophysiology 2 | 3 |
| NURS 2110 | Pharmacotherapeutics of Nursing Practice | 3 |
| NURS 3300 | Nursing Care of Adults: Theory | 3 |
| NURS 3301 | Nursing Care of Adults: Practicum | 3 |
| NURS 3400 | Childbearing Family Nursing: Theory | 3 |
| NURS 3401 | Childbearing Family Nursing: Practicum | 3 |
| NURS 3500 | Mental Health Nursing: Theory | 3 |
| NURS 3501 | Mental Health Nursing: Practicum | 3 |
| NURS 4300 | Nursing Care of Acutely Ill Adults: Theory | 3 |
| NURS 4301 | Nursing Care of Acutely Ill Adults: Practicum | 3 |
| NURS 4400 | Family-centered Nursing of Children: Theory | 3 |
| NURS 4401 | Family-centered Nursing of Children: Practicum | 3 |
| Total | | 48 |

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 4500 | Nursing of Communities: Theory | 3 |
| NURS 4501 | Nursing of Communities: Practicum | 3 |
| NURS 4650 | Nursing Leadership | 3 |
| | Nursing or HEAL elective | 3 |
| | Nursing or HEAL elective | 3 |
| | Nursing or HEAL elective | 3 |
| Total | | 18 |

ARTS AND SCIENCES

BIOMEDICAL SCIENCES

| | |
|---|-----------|
| BISC 1015+ Principles of Human Anatomy and Physiology | 5 |
| Biology or Biochemistry or Chemistry or Microbiology – minimum of | 7 |
| Total | 12 |

PSYCHO-SOCIAL SCIENCES

| | |
|--|---|
| PSYC 1001+ General Psychology | 3 |
| PSYC 2101+ Introduction to Life-Span Development Psychology | 3 |
| SOCI 2200+ The Family | 3 |

Total **9**

ENGLISH

| | |
|--|---|
| ENGL 1001+ and 1002+ Rhetoric and Composition 1 & 2 | 6 |
| Literature/Performing Arts UCCS+ | 3 |

Total **9**

HISTORY

| | |
|-------------------------|---|
| History UCCS+ | 3 |
|-------------------------|---|

MATHEMATICS

| | |
|----------------------|---|
| Math UCCS+ | 3 |
|----------------------|---|

PHILOSOPHY

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

Total **6**

THEOLOGY

| | |
|---|---|
| THEO 1001+ Introduction to Theology | 3 |
| Theology UCCS+ | 3 |

Total **6**

GENERAL ELECTIVES

Total **3**

**Total Credits Required
for Graduation: 128 credits**

†Meets University Core of Common Studies requirement

This program may be completed on a full-time or part-time schedule. Qualified students may substitute specific graduate nursing courses for several of the Phase II nursing courses. In addition, an MSN program is available to RNs who have a baccalaureate degree in a field other than nursing (call 288-3861 for further details).

MASTER OF SCIENCE IN NURSING

Concentrations are offered in health care systems leadership, clinical nurse leader, and advanced practice nursing: nurse-midwifery, children, adults, older adults and adult and pediatric 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 roles as health care systems leaders, clinical nurse leaders, or advanced practice nurses in: adult, older adult, children or nurse-midwifery.

ADMISSION REQUIREMENTS

1. Baccalaureate degree — transcripts of all college work is to be submitted.
2. Undergraduate 3.0 or higher.
3. Graduate Record Examination (GRE) scores.
(The GRE is waived with a 3.200 GPA or higher)
4. Completion of three recommendation forms;
letters of reference are also strongly encouraged.
5. Updated Resume.
6. Written statement of professional goals, including reasons for pursuing graduate study.

7. Completion of the following prerequisite courses with grade of C or better:
- | | |
|--|---------------------|
| Human Anatomy and Physiology | 5-6 credits |
| Chemistry or Biochemistry or Biology or Microbiology | 5-6 credits (total) |
| Behavioral Sciences (e.g. psychology, sociology) | 3 credits |
| Statistics (including inferential analysis) | 3 credits |
8. For International applicants only:
 A TOEFL score of 550 (paper-based version), 213 (computer-based version), 79-80 (Internet-based version including speaking) or other acceptable proof of English proficiency.

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 1025 | Culture and Health | 3 |
| HEAL 2045 | Normal and Therapeutic Nutrition | 3 |
| HEAL 1200 | Women's Health | 3 |
| HEAL 1300 | Substance Abuse | 3 |
| HEAL 3150 | Alternative and Complementary Therapies | 3 |
| HEAL 4152/5152 | Death and Dying | 3 |
| HEAL 1931 | Topics in Health Care | 3 |
| HEAL 6845 | Case Management | 3 |
| GROUP 2 | | |
| HEAL 2100 | Primary Health Care Concepts | 3 |
| HEAL 3100 | International Health | 3 |
| SOCI 3500 | Medical Sociology | 3 |
| CMST 4500/5500 | Health Communication | 3 |
| JOUR 4330/5330 | Health and Science Journalism | 3 |
| CLLS 2060 | Public Health | 3 |
| BISC 4931 | Social Justice Issues in Health Sciences | 1-3 |

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: Faut Callahan
Associate Dean for Research and Graduate Programs and Professor:

Associate Dean for Undergraduate Programs, and Clinical Assistant Professor: Kosmoski-Goepfert
Professor: Bull, Fehring, Schank (Emeritus), Wake
Associate Professor: Frenn, Hanson, VandeVusse, Weis (Emeritus), Weiss, Wilson, Winters
Assistant Professor: Belknap, Bobay, Haglund, Laabs, Lough, Sebern
Clinical Associate Professor: O'Brien, Shaw
Clinical Assistant Professor: Bratt, Dressler, Kowatsch
Clinical Instructor: Berner, Ohlendorf, Sauer

NURS 1000. 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 1931. Topics in Nursing 2-3 sem. hrs.
Various topics in nursing and health care as identified in the *Schedule of Classes*. *Prereq: NURS major.*

NURS 2000. 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, BISC 1060, BISC 2070, and BISC 1015; may be taken concurrently with BISC 3115, HEAL 2045, and NURS 1000.

NURS 2075. Foundations of Nursing Practice 3 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, BISC 1060, BISC 2070, and BISC 1015; may be taken concurrently with BISC 3115, HEAL 2045, NURS 1000.

NURS 2100. 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, BISC 1060, BISC 2070, BISC 1015, NURS 2110, which may be taken concurrently, and PSYC 1001.*

NURS 2110. 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 2070 and BISC 1015.*

NURS 2173. Professional Issues in Nursing 3 sem. hrs.

The impact on professional nursing of external and internal forces including law, ethics, education, and nursing process.
Prereq: NURS major; R.N. students only.

NURS 2964. Individual Study and Practice 1-3 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: Cons. of instr. and enrolled in the College of Nursing.*

NURS 3100. 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, NURS 2100, and PSYC 2101.

NURS 3150. Essentials of Gerontological Nursing 2-3 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. BSN-Pre-licensure students entering prior to fall 2005 complete this course for two credits. BSN-Pre-licensure students entering fall 2005 or later complete this course for three credits.
Prereq: NURS major, NURS 2000, NURS 2075, NURS 2100, NURS 2110, and NURS 3100, which may be taken concurrently.

NURS 3200. Introduction to Nursing Research 2-3 sem. hrs.

Overview of research in nursing and its application to nursing practice. BSN-Pre-licensure students entering prior to fall 2005 complete this course for two credits. BSN-Pre-licensure students entering fall 2005 or later complete this course for three credits. *Prereq: Jr. stndg. and NURS major.*

NURS 3300. 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, HEAL 1025, HEAL 2045, NURS 2075, NURS 2100, NURS 2110, NURS 3100 (which may be taken concurrently). Must be taken concurrently with NURS 3301.

NURS 3301. 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. S/U grade assessment.
Prereq: NURS major and NURS 3300, which must be taken concurrently.

NURS 3400. Childbearing Family Nursing: Theory 2-3 sem. hrs.

Study of diverse families during childbearing period. Focus is on nursing process, health promotion, and families in transition and adaptation from pre-conception through post-partum. BSN-Pre-licensure students entering prior to fall 2005 complete this course for two credits. BSN-Pre-licensure students entering fall 2005 or later complete this course for three credits. Offered every term.
Prereq: HEAL 1025, HEAL 2045, NURS 2075, NURS 2100, NURS 2110, NURS 3100 (which may be taken concurrently); SOCI 2200, and PSYC 2101; must be taken concurrently with NURS 3401.

NURS 3401. Childbearing Family Nursing: Practicum 3 sem. hrs.

Guided experience in the care of diverse families from pre-conception 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. S/U grade assessment. *Prereq: NURS major; must be taken concurrently with NURS 3400.*

NURS 3500. Mental Health Nursing: Theory 2-3 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. BSN-Pre-licensure students entering prior to fall 2005 complete this course for two credits. BSN-Pre-licensure students entering fall 2005 or later complete this course for three credits.
Prereq: NURS major, HEAL 1025, HEAL 2045, NURS 2075, NURS 2100, NURS 2110, NURS 3100 (which may be taken concurrently); PSYC 2101, SOCI 2200; must be taken concurrently with NURS 3501.

NURS 3501. 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. S/U grade assessment. *Prereq: NURS major; must be taken concurrently with NURS 3500.*

NURS 4050. Health Assessment for Registered Nurses 3 sem. hrs.

Develop assessment skills to systematically collect and analyze data to make clinical judgments related to health status. *Prereq: NURS major, R.N. student, or nursing graduate student, or cons. of instr.*

NURS 4300. 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, NURS 3200, NURS 3300, NURS 3301, NURS 3400, NURS 3401, NURS 3500, and NURS 3501; must be taken concurrently with NURS 4301.

NURS 4301. Nursing Care of the Acutely Ill Adult: Practicum 3 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. S/U grade assessment. *Prereq: NURS major; must be taken concurrently with NURS 4300.*

NURS 4350. Critical Care Nursing 3 sem. hrs.

Integration of pathophysiologic concepts and psychosocial variables unique to caring for critically ill adults.

Prereq: Sr. stndg. and NURS major; or R.N. student.

NURS 4400. Family Centered Nursing of Children: Theory 2-3 sem. hrs.

Family centered nursing of children and adolescents in diverse populations. Focus on health promotion, maintenance, acute and chronic health problems. BSN-Pre-licensure students entering prior to fall 2005 complete this course for two credits.

BSN-Pre-licensure students entering fall 2005 or later complete this course for three credits.

Prereq: Sr. stndg., NURS major, NURS 3300, NURS 3301, NURS 3400, NURS 3401, NURS 3500, and NURS 3501; must be taken concurrently with NURS 4401.

NURS 4401. Family Centered Nursing of Children: Practicum 3 sem. hrs.

Emphasis on application of theory and the planning and provision of care to healthy and ill children. S/U grade assessment. *Prereq: Sr. stndg. and NURS major; must be taken concurrently with NURS 4400.*

NURS 4500. Nursing of Communities: Theory 2-3 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. BSN-Pre-licensure students entering prior to fall 2005 complete this course for two credits. BSN-Pre-licensure students entering fall 2005 or later complete this course for three credits.

Prereq: Sr. stndg., NURS major, NURS 3300, NURS 3301, NURS 3400, NURS 3401, NURS 3500, and NURS 3501; must be taken concurrently with NURS 4501.

NURS 4501. Nursing of Communities: Practicum 3 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. S/U grade assessment. *Prereq: Sr. stndg. and NURS major; must be taken concurrently with NURS 4500.*

NURS 4601. 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. S/U grade assessment.

Prereq: Sr. stndg., NURS major, NURS 3200, NURS 3300, NURS 3301, NURS 3400, NURS 3401, NURS 3500, and NURS 3501.

NURS 4650. Nursing Leadership 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., NURS major, NURS 3200, NURS 3300, NURS 3301, NURS 3400, NURS 3401, NURS 3500, and NURS 3501; must be taken concurrently with either NURS 4301, 4401, or 4501.

NURS 4995. Independent Study in Nursing 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: Cons. of instr. and enrolled in the College of Nursing.*

HEALTH (HEAL)

The following HEALTH (HEAL) courses are offered by the College of Nursing and open to all students of the university.

▲HEAL 1025. 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.

HEAL 1200. 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.

HEAL 1300. Substance Abuse 3 sem. hrs.

A comprehensive overview of substance abuse throughout the life span. Addresses the physiological, psychological, sociological and spiritual perspectives.

HEAL 1931. Topics in Health Care 2-3 sem. hrs.

Special topics in health care as identified in the *Schedule of Classes*.

HEAL 2045. 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 1060 and BISC 2070 and BISC 1015; not open for credit to students who have completed BISC 3110.

HEAL 2100. Primary Health Care Concepts 3 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 3100. 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 3150. 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 4000. Epidemiology 3 sem. hrs.

Analysis of occurrence and patterns of disease in populations including prevention and control strategies.

HEAL 4152. Death and Dying 3 sem. hrs.

Multidisciplinary perspective on death and dying. Includes historical, sociocultural, legal, and ethical dimensions, the dying process, grief and bereavement, and communities of care.

HEAL 4200. Natural Family Planning 3 sem. hrs.

Physiological, behavioral, and spiritual aspects important to teaching and using natural family planning. *Prereq: Jr. stndg.*

HEAL 4201. Natural Family Planning Practicum 3 sem. hrs.

Practical application of theory and skills for teaching natural family planning. *Prereq: Jr. stndg.*

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, online, hybrid and weeknight classes with a curriculum focused on the changing needs of a changing society. Classes are held at two locations: Milwaukee and Waukesha.

For individuals pursuing or advancing their careers 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 that can be 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 diverse adult learners with a values-based education that results in a commitment to competently, courageously and ethically apply themselves to the conscious, effective, lifelong transformation of their professional situations and personal lives.

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.

The College of Professional Studies offers programs leading to the master in dispute resolution (M.D.R.), the master in leadership studies (M.L.S.), the master of arts in public service (M.A.P.S.), and the graduate certificates in dispute resolution, law enforcement leadership and management, and leadership studies. For information regarding these graduate programs, please see the *Graduate Bulletin*.

ADMISSION REQUIREMENTS

All students, freshman or advanced standing, applying to the College of Professional Studies must submit a completed application, writing essay, official transcripts from a high school or institution granting GED and, if appropriate, official transcripts from all post secondary institutions. An applicant's entire academic performance will be evaluated in making an admissions decision.

If an applicant was enrolled or registered at another institution since graduating from high school, official transcripts from such schools must be sent to the College of Professional Studies. Generally a minimum average of 2.000 (on a 4.000 scale) in college work is needed for consideration.

Non-degree applicants to the College of Professional Studies should refer to the 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 of their relevance to the requirements of the program and grade earned is a C or better. 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.

MARQUETTE CREDIT BY EXAMINATION

In recognition that students may possess mastery of the content of a particular course which they have not registered, they can petition the college office to establish a testing procedure whereby the student can demonstrate his/her knowledge. Please refer to the University Academic Regulations section of this bulletin.

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/or evening classes. Please consult the online *Snapshot 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 GPA in their Marquette work.
3. Students must complete a minimum of 32 credit hours of upper division course work at Marquette University.
4. A minimum 15 credits in the major and at least 9 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 of adult students marked by excellence, faith, leadership and service. Students enrolled in the College of Professional Studies will complete the requisite 36 credit hours in the nine knowledge areas plus an additional 21-27 credits as follows:

| <i>Knowledge Area</i> | <i>Common Core Credits</i> | <i>Plus additional College Curriculum Credits</i> |
|---|----------------------------|---|
| Rhetoric (R) | 6 | 0 |
| Mathematical Reasoning (MR) | 3 | 3 |
| Individual and Social Behavior (ISB) | 3 | 0 |
| Diverse Cultures (DC) | 3 | 0 |
| Literature/Performing Arts (LPA) | 3 | 3 |
| Histories of Cultures and Societies (HCS) | 3 | 3 |
| Science and Nature (SN) | 3 | 0 |
| Human Nature and Ethics (HNE) | 6 | 0 |
| Theology (T) | 6 | 0 |
| Total | 36 | 9 |

▲ Indicates UCCS courses in course descriptions.

Additional Skills courses required for the College Curriculum

| | |
|---|-----------|
| PRST 2110 Principle of Liberal Studies | 3 |
| ENGL 3220 Writing for the Professions | 3 |
| CMST 3210 Business and Professional Presentations | 3 |
| PRST 1110 Introduction to Information Systems | 3 |
| Total | 12 |

Optional Skills course may be required for the College Curriculum

| | |
|---|---|
| PRST 1953 Foundations Seminar | 3 |
| PRST 1005 Fundamentals of College Reading and Writing | 3 |

Total University Common Core and College Curriculum

| | |
|--|--------------|
| Credit Hours Required | 57-60 |
| Major | 30-35 |
| Minor (Optional) | 18-21 |
| Elective Credits | 10-42 |

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 1953. This course is considered an elective.

FUNDAMENTALS OF COLLEGE READING AND WRITING (3 credit hours)

For increased success some new students may be required to complete PRST 1005. This course is considered an elective.

PRINCIPLES OF LIBERAL STUDIES (3 credit hours)

All students are required to complete PRST 2110 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 1110 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 courses for a total of 12 credit hours. The specific courses that all College of Professional Studies students need to complete this requirement are ENGL 1001 and ENGL 1002, Rhetoric and Composition 1* and 2*; ENGL 3220, Writing for the Professions; and CMST 3210 Business and Professional Presentations.

HISTORY (6 credit hours)

All students are required to complete six credit hours of history. Generally students in the College of Professional Studies complete their history requirement with HIST 1001 and 1002 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 2410 Introduction to English Literature 1* and ENGL 2510 Introduction to American Literature 1*.

MATHEMATICS (6 credit hours)

All students must complete six credit hours of mathematics, of which three credit hours must be PRST 2140 Research and Statistical Methods*. The remaining credit hours selected depend upon the student's individual needs.

| <i>Course</i> | <i>Credit hours</i> |
|---|---------------------|
| MATH 1100 College Algebra | 3 |
| PRST 1140 Foundations of Applied Mathematics. | 3 |

NATURAL SCIENCE (3 credit hours)

All students must complete PRST 1120 Aspects of Modern Science* for three credit hours. Additional and/or different natural science courses may be approved by the college.

PHILOSOPHY (6 credit hours)

All student must complete PHIL 1001 Philosophy of Human Nature* and one upper division course, PHIL 2310 Theory of Ethics*, for a total of six credit hours.

SOCIAL-BEHAVIORAL SCIENCES (6 credit hours)

All students must complete six credit hours of social-behavioral science, of which three credits hours must be PSYC 1001 General Psychology*. Students may choose one of the following courses for the remaining three credit hours. Other social science courses may also fulfill the remaining 3 credit hours; however, those options are not offered through the eight week format in the College of Professional Studies.

| <i>Course</i> | <i>Credit hours</i> |
|--|---------------------|
| SOCI 1001 Principles of Sociology* | 3 |
| ANTH 1001 Introductory Anthropology* | 3 |
| CRLS 1001 Introduction to Criminology* | 3 |
| POSC 2201 American Politics* | 3 |

THEOLOGY (6 credit hours)

All students must complete THEO 1001 Introduction to Theology* and one second level UCCS approved theology course for a total of six credit hours. THEO 2400 Christian Discipleship* is suggested as second level theology selection.

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/programs/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 areas of this bulletin. Course descriptions for organization and leadership, the professional minor, and PRST designated coursework will follow this section.

Criminology and Law Studies (CRLS)

Major: Requires 30 credit hours, 10 courses in CRLS including CRLS 1001, 2100, 3100, 3300 or 3350, 4640, 3400, 3500 and three of the following four courses: CRLS 4660, 4130, 4700, 4931.

Minor: Requires 18 credit hours, six courses in CRLS including CRLS 1001.

(Course descriptions are found in this bulletin in the criminology and law studies section of the Klingler College of Arts and Sciences.)

Professional Communication (PRCO)

Major: Requires 30 credit hours, including CMST 1000, 2000, 2100, 2310, 3300 and five of these six courses, CMST 3100, 3200, 3310, 3410, ADPR 2200 and COMM 4400.

Minor: Requires 21 credit hours, including CMST 1000, 2000, 2100, 3100, 3300, COMM 4400 and one three-credit course in CMST.

(Course descriptions are found in this bulletin in the communication studies section of the Diederich College of Communication.)

Psychology (PSYC)

Major: Requires 35 credit hours including PSYC 1001, 2001, 2050 and at least one course from at least five of the following eight content areas: developmental (3101, 3120); social (3201); learning (3301); assessment (3701); history and systems (4801); personality theories (3501); physiological (3601); and abnormal (3401).

Minor: Requires 18 credit hours; six courses in psychology including PSYC 1001.

(Course descriptions are found in this bulletin in the psychology section of the Klingler College of Arts and Sciences.)

Professional Minor (PRMI) (MINOR ONLY)

Minor: Requires 21 credit hours, seven courses in organization and leadership, ORLE 1280, 2165, 2210, 2220, 2240, 2710, and 3310.

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 and Organizational Development, Social Context, Professional Communication, Liberal Studies Leadership Perspective, Information Systems and Commerce.

Core Leadership Courses: Eighteen hours of core leadership courses consisting of ORLE 2100, 2140, 2150, 2160, 4997 and PRST 3110 are required. In addition to each of these 18 hours, one of the following concentrations must be completed.

Concentrations:

Organizations and Organizational Development: ORLE 1300, 2310, 3320, 3340, and one of the following courses: ORLE 3310, 3330, 3360, 3380.

Leadership: Liberal Studies Perspectives: ORLE 2420, 3420, 3440, 3460, 3480.

Professional Communication: CMST 1000, 2000, ORLE 3610 and two of the following courses: CMST 2100, 3200, 3310, 3410, COMM 4400 or ADPR 2200.

Social Context: ORLE 2440, 3440, 3520, 3540, 3610.

Information Systems: ORLE 2710 and four of the following courses: ORLE 3720, 3730, 3740, 3750, 3760 and 3770.

Commerce: ORLE 1260, 1280, 2220, 2240, and 3210.

Minor: Requires 21 credit hours, ORLE 2100, 2140, 2150, 2160 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 has been declared. Also, any student electing the ORLE major with the Commerce concentration cannot declare a Professional Minor. Students in the Diederich College of Communication with a major in communication studies may not select the Professional Communication concentration in the ORLE major.

ACADEMIC REGULATIONS

Students in the College of Professional Studies are expected to adhere to the academic requirements and regulations listed in the University section of this bulletin and should refer to the College of Professional Studies student handbook available in the college office or online at the College's Advising D2L site.

ACADEMIC PERFORMANCE/CENSURE

Students admitted to the College of Professional Studies are expected to meet the college's academic standards. Academic performance of students in the college will be monitored closely. Any student who does not maintain the academic standards of the college, progress steadily toward graduation, or demonstrate adequate achievement will be required to withdraw from the college.

Academic progress of students will be reviewed each eight-week session, or as indicated by the college, by means of special conditions. Special conditions will be given in writing to the student at the time of admission, readmission, or transfer to the college. Anytime during the student's attendance in the college when academic progress is in question, special conditions may be required of the student for continued enrollment. Failure to adhere to the terms of the special conditions will result in academic withdrawal.

ACADEMIC DISHONESTY

The College of Professional Studies complies with the policy on academic dishonesty found in the University section of this bulletin. Professionalism in the university setting encompasses the ethical responsibility of each student to complete his/her own course work. Any student who plagiarizes, cheats or falsifies work or takes part in such activities may fail the assignment, the course or be dismissed from Marquette University.

ADVISERS

Each student admitted to the College of Professional Studies is assigned a professional adult student adviser with whom the student should make contact at least once every eight-week session. The adviser is a resource to assist the student in planning his/her specific program of study and to assist the student in clarifying and achieving specific educational goals. Note that it is the responsibility of the student to understand and complete requirements for graduation, specific to the program selected.

ATTENDANCE POLICY

Student attendance in each class per eight-week session is deemed necessary for the successful completion of the course. The College of Professional Studies acknowledges that individual circumstances may prevent a student from attending a particular class period. Whenever possible, an absence should be prearranged with the professor. The student is responsible for all materials covered and announcements made during his/her absence. It should be noted that the college does not differentiate between excused and unexcused absences.

Multiple absences may compromise the integrity of the learning experience. Therefore, students with two absences from 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 WA will appear on the official transcript. Please note that degree progress and financial aid may be impacted.

Tardiness and leaving early from class affect student performance. The student's grade and/or standing in the class may be adjusted accordingly.

In order to administer this policy effectively, each instructor will take attendance at every 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.

INCOMPLETE GRADES

A student who does not complete course assignments, tests, quizzes, presentations, etc., prior to the end of the session 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 and communicated to the Associate Dean by the instructor. Additional information regarding incomplete grades is available in the College of Professional Studies student handbook.

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 session immediately following the session in which the course grade appeal occurred. Further, the student may initiate the process only after all possibilities of resolution have been explored with the course instructor. If a satisfactory resolution is not agreed upon, or if the student still believes that the course grade is in error, the student must submit-in writing—to the associate dean a formal letter of appeal. The appeal letter should include, but is not limited to, the following:

1. Course name and number.
2. Term the course was taken and completed.
3. Grade received.
4. Rationale for grade dispute.
5. Steps taken to resolve the grade dispute.

Consideration will be given to each appeal received by the associate dean prior to the end of the following term.

Further appeal may be made to the dean of the college, who will consider the grade appeal based on university and college procedures and has the right to assign the final grade for the course.

MAILING, FAXING AND E-MAILING ASSIGNMENTS TO INSTRUCTORS

Students may use the U.S. Postal Service, e-mail or facsimile to submit assignments to their instructors, only if the instructors agree to this arrangement prior to the submission of work. The student should be aware that, if the assignment is not received, measures taken to rectify the situation are at the discretion of the instructor, which may result in a failing grade or a final grade determined based on the missing assignment.

It is the student's responsibility to retain a copy of his/her assignment for his/her records. This will ensure that, if the copy is not received, an additional copy can be submitted in a timely manner, replacing the original.

Each student should call the receiver of the submitted assignment to verify it was received.

MAKE-UP EXAMINATIONS

At various times during the academic year, circumstances may prevent a student from taking an examination at the regularly scheduled examination time. At the discretion of the instructor, the student may take the examination at an alternative pre-arranged time. This rescheduled test/quiz/exam must be arranged prior to the regularly scheduled test/quiz/exam. In most instances,

it is expected that the examination is completed prior to the next class meeting. This makeup examination can be done during the review session time or at a time both the instructional assistant and the student can meet. If an instructional assistant is not available for this class then arrangements must be made with the college office. Please refer to the College of Professional Studies student handbook for further information.

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 session, students can find textbook lists and homework due at the first class meeting at the individual course D2L online sites. Students are expected to complete the assignments for the first class and come prepared to participate.

REMOVAL OF INCOMPLETE GRADES

The dates to complete and submit all course work for a class that a student originally received an incomplete grade are listed in the 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. The maximum deadline to remove an incomplete grade is six weeks after completion of the session. 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 via CheckMarq of the aid for which you qualify. Of the sources listed, you will have the opportunity to decline any type of aid you do not wish to receive.

If you have questions or do not have access to the online applications, 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.

FINANCIAL AID SOURCES

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.

ADDITIONAL RESOURCES

PRIVATE SCHOLARSHIPS

Check with your community 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.

Utilize free scholarship search engines and databases on the Web. 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, see 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.

The College of Professional Studies offers one additional scholarship primarily based upon merit: Spirit of Ignatius Scholarship. Please contact the admissions and records coordinator at (414) 288-3153 for further information.

STUDY GRANTS

The College of Professional Studies has study grants available for adult learners at Marquette. Grants are available for students who are degree seeking, have applied for financial aid, and 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, must demonstrate financial need and must be registered for courses in the session in which they are requesting the grant. Applications, deadline dates and additional eligibility information can be obtained by contacting the college office at (414) 288-3153.

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 two distinct venues, which enhances the existing college.

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 707 Building, 707 N. 11th St., Suite 403 or call (414) 288-3153.

WAUKESHA COUNTY

The College of Professional Studies offers courses at the Country Springs Hotel and Water Park in Pewaukee, Wis. The Country Springs Hotel and Water Park is located off Interstate 94, exit Hwy T to Golf Road in Waukesha County. For information on this scheduling option, contact the College of Professional Studies advising staff at (414)288-3153.

COURSE DESCRIPTIONS

PROFESSIONAL STUDIES (PRST)

PRST 1005. Fundamentals of College Reading and Writing 3 sem. hrs.

Focuses on the reading and writing skills necessary for success in the college's core curriculum courses. The student is introduced to the critical reading strategies required in an academic setting. The course works on the basic writing skills of essay structure and grammar conventions: looking for and constructing topic sentences, working with different essay formats, reviewing the basics of grammar conventions, punctuation, sentence structure and paragraphing. Students may be required to register for this course upon the recommendation of the admissions committee as a condition of enrollment.

PRST 1110. 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 1120. 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 1140. 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 1953. 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. S/U grade assessment. *Prereq: Open to first-year College of Professional Studies students only.*

PRST 2110. Principles of Liberal Studies 3 sem. hrs.

Introduction to the disciplinary frameworks of the common core offered by Marquette University. Its purpose is to promote lifelong learning, and enhance the skills of analysis, problem solving, critical thinking, writing and communication needed for successful academic achievement in a liberal arts education. The course develops a common ground of understanding and values among students through shared knowledge of the liberal arts. The course

offers students an opportunity to enhance their critical thinking, oral expression and writing. *Prereq: Enrolled in Professional Studies; ENGL 1001 and ENGL 1002 or equiv.*

▲PRST 2140. Research and Statistical Methods 3 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 1100 recommended.*

PRST 2986. Internship in Professional Studies 1-3 sem. hrs.

Field experience in government, non-profit, corporate, and/or other administrative law agencies for the purpose of furthering the student's integration of theory, skills, and practice as related to a student's major or minor within a professional organizational setting. Experiential opportunities are augmented with selected readings, reflective journals, papers, and in-class seminars. *Prereq: Enrolled in Professional Studies; Soph stndg.; cum GPA of 2.000; ENGL 1001, ENGL 1002, and ORLE 2100 or CMST 1000, or CRLS 1001.*

PRST 3110. Research and Inquiry Methods 3 sem. hrs.

An upper-level course designed to expose the learner to the methods and means of scientific inquiry. The course offers the student three topical emphases to explore: multi-disciplinary case analyses, an examination of ethical issues in research and reporting, and statistical software use. Students will construct a survey instrument, practice focus group studies and engage in comparative analysis through group work. An introductory statistics course is required as a prerequisite. *Prereq: PRST 2140 or equiv.*

PRST 3986. Internship in Professional Studies 1-3 sem. hrs.

Field experience in government, non-profit, corporate, and/or other administrative law agencies for the purpose of furthering the student's integration of theory, skills, and practice as related to a student's major or minor within a professional organizational setting. Experiential opportunities are augmented with selected readings, reflective journals, papers, and in-class seminars. *Prereq: Enrolled in Professional Studies; Soph stndg.; cum GPA of 2.000; ENGL 1001, ENGL 1002, and ORLE 2100 or CMST 1000, or CRLS 1001.*

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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 1260. Personal and Family Financial Planning 3 sem. hrs.

Focuses on the financial planning needs of individuals, families and working professionals. Specific emphasis is given to contemporary issues facing individuals and households by providing a general overview across a broad range of topics. These topics include family budgeting, personal investing, consumer purchasing, credit, home purchasing/mortgages, employee benefit selection and estate planning. Students will also develop detailed individual and family financial plans. *Prereq: Enrolled in Professional Studies.*

ORLE 1280. Marketing Concepts and e-commerce 3 sem. hrs.

Examines the role of marketing from both a business strategy and societal perspective. Students will examine the strategic, decision-making aspects of marketing including demand creation, consumer behavior, product management, pricing strategies, e-commerce, and advertising. The course will emphasize contemporary marketing cases and students will participate in practical projects to reinforce demand creation theory. The program will also examine the societal aspects of marketing including the effects of advertising on shaping cultural attitudes, social mores, and public opinion. *Prereq: Enrolled in Professional Studies.*

ORLE 1300. 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 1931. Topics in Organization and Leadership 1-3 sem. hrs.

Various topics selected from one of the various within organization and or leadership. Specific topics to be announced in the *Schedule of Classes*. *Prereq: Enrolled in Professional Studies and Jr. stndg.*

ORLE 2100. 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 2125. 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 2100.*

▲ Indicates UCCS courses

ORLE 2135. Issues in Organizational Leadership 2 3 sem. hrs.

Prereq: Enrolled in Professional Studies and ORLE 2100.

ORLE 2140. Ethics in Leadership 3 sem. hrs. A foundation course in which the student examines, determines, and applies the essential leadership dimension of ethical thought and behavior. Literature, presentations, projects, and discussion will include contemporary and classical thinking and trace its evolution over time and circumstances. Consideration will be given to Greek and Roman periods, the role of religious thought, the humanism of the Renaissance, the Age of Enlightenment, and the Industrial Revolution. The outcomes of these eras in western civilization will be compared to those of other cultures and regions with attention to the impact on related societies. Students will experience the often complex and competing demands and interests of different cultures and societal groups and will develop a personal sense of principles which have universal application along with areas of reasonable compromise in achieving ethical outcomes. Other world intercultural perspectives will be explored including: political, legal, theological, environmental, educational, and tradition-based institutions. Practical ethical issues and problems related to cultural diversity, international business environments and influences will be explored. As a concluding exercise, students will develop a paper on their personal philosophy concerning ethical leadership principles and practices to which they are willing to commit in their professional and personal lives. *Prereq: Enrolled in Professional Studies and ORLE 2100.*

▲ORLE 2150. 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; ORLE 1300 recommended.*

ORLE 2160. 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 2165. 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 2140 or equiv.*

ORLE 2210. 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 1100 or equiv.*

ORLE 2220. 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 1100 or equiv.*

ORLE 2240. 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 1100 or equiv.*

ORLE 2310. 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; ORLE 1300 recommended.*

ORLE 2420. 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 2710. 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 1110; suggest completion of 3 of the classes ORLE 2210, 2220, 2240, 1280.*

ORLE 2931. Topics in Organization and Leadership 1-3 sem. hrs.

Various topics selected from one of the various within organization and or leadership. Specific topics to be announced in the *Schedule of Classes*. *Prereq: Enrolled in Professional Studies and Jr. stndg.*

ORLE 3045. 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 3155. 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 3210. Global Commerce 3 sem. hrs.

Equip students with an analytical perspective on the most recent issues in contemporary global commerce. The content will focus on those forces currently having a profound impact, and imposing unique leadership challenges, on either corporate societal responsibility, the business operating environment, economic and regulatory systems, leadership, or financial climates. Course work will examine from three to six global topics per term. The emphasis of the course will be on developing and examining management interventions and leadership solutions. Therefore, students will be required to both assess topical issues and propose solutions to those contemporary commercial challenges. Students will be expected to work in collaborative teams and in an environment of spirited, constructive debate. *Prereq: Complete 2 of the following: ORLE 2220, ORLE 2240, ORLE 1260, ORLE 1280.*

ORLE 3310. 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 3320. 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 communication within an organizational setting and requires students to design an organizational structure that effectively considers the environment, technology, goals, profile and stage of growth of the organization. *Prereq: Enrolled in Professional Studies and ORLE 2310.*

ORLE 3330. Consultation Theory and Practice 3 sem. hrs.

Covers conceptual knowledge of various models to increase organizational effectiveness, techniques used in consulting practices and opportunities to develop necessary skills. Students will develop and integrate theoretical and practical perspectives, approaches, and skills as a consultant. The process, affective, and collaborative dimensions of consulting, and client-consultant relationship are examined. Relationship management through the stages of the consulting process will be investigated. Dimensions such as capacities of the consultant, needs of the client organization relationships between the client and consultant and how to manage the relations will be explored. *Prereq: ORLE 3340.*

ORLE 3340. Organization Development and Change 3 sem. hrs.

Reviews the broad background of organizational development (OD) and examines the assumptions, strategies, models, intervention techniques and other aspects of organizational development. The fundamental theories that underlie planned change are examined. The process of planned changes is then studied through a look at how OD practitioners enter and contract with client systems to diagnose organizations, groups and jobs; collect, analyze and feed back diagnostic data; design interventions; manage change; and evaluate and institutionalize change. Major OD methods - human process, techno-structural, human resource management and strategic interventions are deliberated. Students learn through case studies how different OD techniques or interventions are used by actual organizations. *Prereq: Enrolled in Professional Studies and ORLE 3320.*

ORLE 3360. Future Directions of Organizations 3 sem. hrs.

Examines current issues facing organizations in planning and managing change efforts and how leadership styles impact the organization. Prepares students to influence the human side of developing and implementing changes in organizations. By combining theory and exercises, students will better understand the socio-technical perspective of change, see leadership as invoking followership, and grasp the significance of values-based leadership. *Prereq: Enrolled in Professional Studies and ORLE 3340.*

ORLE 3380. Facets of Organizational Development and Change 3 sem. hrs.

Addresses specific aspects of organizational development. Career development, organizational assessment and appraisal, and program evaluation will be further explored. Students examine theoretical and practical perspectives, approaches, and skills. The larger political, administrative and ethical issues are also examined. *Prereq: ORLE 3340.*

ORLE 3390. Organizational Strategies 3 sem. hrs.

Investigates how to craft, implement and execute organization strategies. The importance of identifying and determining the value-creating potential of a firm's resources, capabilities and core competencies are examined. The dynamics of strategic change in the complex global economy and at the corporate level are studied. *Prereq: Enrolled in Professional Studies and ORLE 3320.*

ORLE 3420. Integrity in Leadership: Religious Perspectives 3 sem. hrs.

Considers the lives and teachings of some of history's outstanding religious leaders, including Jesus of Nazareth, David, St. Augustine, St. Ignatius of Loyola, Dietrich Bonhoeffer, Dorothy Day, Mahatma Gandhi, Martin Luther King, Jr., Thomas Merton, and Pope John Paul II. Through critical analysis of autobiographical, biographical, and primary texts, the course will examine the manner in which each figure exemplifies the theological virtues of faith, hope, and love, and how these virtues guide, drive, and inform their respective lives and leadership. *Prereq: Enrolled in Professional Studies and THEO 1001.*

ORLE 3440. Leaders in Social Movements 3 sem. hrs.

Focuses on the manifestation of social movements, with a special emphasis on the leaders in these movements. Through readings, film, primary and secondary research, as well as class participation, students will discover how social movement leaders emerge and the roles these leaders play in social movements and societies. *Prereq: Enrolled in Professional Studies and ORLE 2100; ORLE 1300 recommended.*

ORLE 3460. 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 1002.*

ORLE 3480. Historical Leadership during World Conflicts 3 sem. hrs.

Requires the student to examine leadership events during world conflicts and analyze them using leadership theories that elucidate the critical elements of leadership and decision making. These elements include how the leader(s) and followers exerted influence, decided upon goals and objectives, developed courses of action to attain those goals, and how they developed a shared sense of purpose to successfully implement a course of action. Students will develop case studies of key events and decisions. *Prereq: Enrolled in Professional Studies and HIST 1001 and HIST 1002 and ORLE 2100.*

ORLE 3520. 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 2100.*

ORLE 3540. 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 2100.*

ORLE 3610. Communicating Leadership: Issues and Applications 3 sem. hrs.

Moves beyond the study of what a leader is to how a leader accomplishes. While examining how leaders use communication students will critically analyze these questions. What is the relationship between leadership and communication styles? What communication competencies are needed by organizational leaders? How do leaders use communication to facilitate change in organizations? How does an individuals' gender, race and/or ethnicity affect leadership and communication behaviors. *Prereq: Enrolled in Professional Studies and CMST 1000 and ORLE 2100.*

ORLE 3720. 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 1110.*

ORLE 3730. 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 1110.*

ORLE 3740. 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 1110.*

ORLE 3750. 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 1110.*

ORLE 3760. 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 1100.*

ORLE 3770. 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 1140 and PRST 1110.*

ORLE 3931. Topics in Organization and Leadership 1-3 sem. hrs.

Various topics selected from one of the various within organization and or leadership. Specific topics to be announced in the *Schedule of Classes*. *Prereq: Enrolled in Professional Studies and Jr. stndg.*

ORLE 4931. Topics in Organization and Leadership 1-3 sem. hrs.

Topics selected from one of the various within organization and/or leadership. Specific topics to be announced in the *Schedule of Classes*. *Prereq: Enrolled in Professional Studies and Jr. stndg.*

ORLE 4995. Independent Study in Organization and Leadership

1-3 sem. hrs.

Offered every quinmester. *Prereq: Enrolled in Professional Studies and cons. of dept. ch.; cons. of Dean of College of Professional Studies.*

ORLE 4997. 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 course work required.

Prereq: Enrolled in Professional Studies.

University Directory

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Vice Chair

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Vice President for Public Affairs

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Vice Provost for Undergraduate Programs
and Teaching

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Vice President for Marketing and
Communication

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Executive Director for University Mission
and Identity

ARTHUR SCHEUBER
Vice President for Administration

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Vice President for Student Affairs

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Vice President for University Advancement

WILLIAM R. WIENER, Ph.D.
Vice Provost for Research and
Dean of the Graduate School

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Faculty elected at large (Journalism) – 2009

DR. JOHN PAULY (Co-Chair)

Provost – Ex-Officio

PROF. EDWARD FALLONE (Vice-Chair*)

Faculty elected at large (Law) – 2009

DR. KRISTY NIELSON (Secretary)

Faculty elected at large (Psychology) – 2009

DR. MARGARET BLOOM

Vice Provost for Undergraduate Programs
and Teaching – Ex-Officio

DR. WILLIAM WIENER

Vice Provost for Research/Dean of the
Graduate School – Ex-Officio

DR. JEANNE HOSSENLOPP

Interim Dean, Klingler College of Arts
and Sciences – Ex-Officio

DR. MARGARET FAUT CALLAHAN

Dean, College of Nursing – Dean's
Representative

DR. WILLIAM CULLIAM

Dean, College of Health Sciences –
Dean's Representative

DR. LINDA SALCHENBERGER

Dean, College of Business Administration –
Dean's Representative

MS. JANICE WELBURN

Dean, Raynor Memorial Libraries –
Dean's Representative

DR. JAMES COURTRIGHT

Klingler College of Arts and Sciences
elected faculty – 2010

DR. WANDA ZEMLER-CIZEWSKI

Klingler College of Arts and Sciences
elected faculty – 2011

DR. JAMES SOUTH

Klingler College of Arts and Sciences
elected faculty – 2010

DR. STEVEN TAYLOR

Klingler College of Arts and Sciences
elected faculty – 2009

DR. CHERYL MARANTO

College of Business Administration
elected faculty – 2011

DR. SIDDHARTHA SYAM

College of Business Administration
elected faculty – 2009

DR. STEVEN GOLDZWIG

Diederich College of Communication
elected faculty – 2009

DR. STEPHEN HUDSON-MAIRET

Diederich College of Communication
elected faculty – 2010

DR. EVELYN DONATE-BARTFIELD

School of Dentistry elected faculty – 2011

DR. JADWIGA HJERTSTEDT

School of Dentistry elected faculty – 2009

DR. SHARON CHUBBUCK

College of Education elected faculty – 2009

DR. SARAH KNOX

College of Education elected faculty – 2011

DR. OTTO WIDERA

College of Engineering elected faculty – 2011

DR. ALEX DRAKOPOULOS

College of Engineering elected faculty – 2010

DR. EDWARD KORABIC

College of Health Sciences
elected faculty – 2009

DR. ALEXANDER NG

College of Health Sciences
elected faculty – 2010

PROF. BRUCE BOYDEN

Law School elected faculty – 2011

PROF. EDWARD FALLONE

Law School elected faculty – 2010

DR. MARILYNN FRENN

College of Nursing elected faculty – 2011

DR. KRISTIN HAGLUND

College of Nursing elected faculty – 2009

REV. MIKE CLASS, S.J.

College of Professional Studies
FT/PT elected faculty – 2010

MR. JOHN JENTZ

Academic Library Association
elected faculty librarian – 2009

DR. DANIEL MEISSNER

Faculty elected at large – 2010

DR. CHRISTINE KRUEGER

Faculty elected at large – 2009

DR. KRISTY NIELSON

Faculty elected at large – 2010

DR. WILLIAM THORN

Faculty elected at large – 2009

DR. ANNE PASERO

Faculty elected at large – 2011

DR. DIANE HOEVLER

Faculty elected at large – 2011

MRS. SUSAN HOPWOOD

Part-time faculty elected at large
(Libraries) – 2010

MR. JASON RAE

MUSG – 2009

MR. RAY REDLINGSHAFFER

MUSG – 2009

MS. KRISTEN HICKMAN

Professional/Graduate Student -2009

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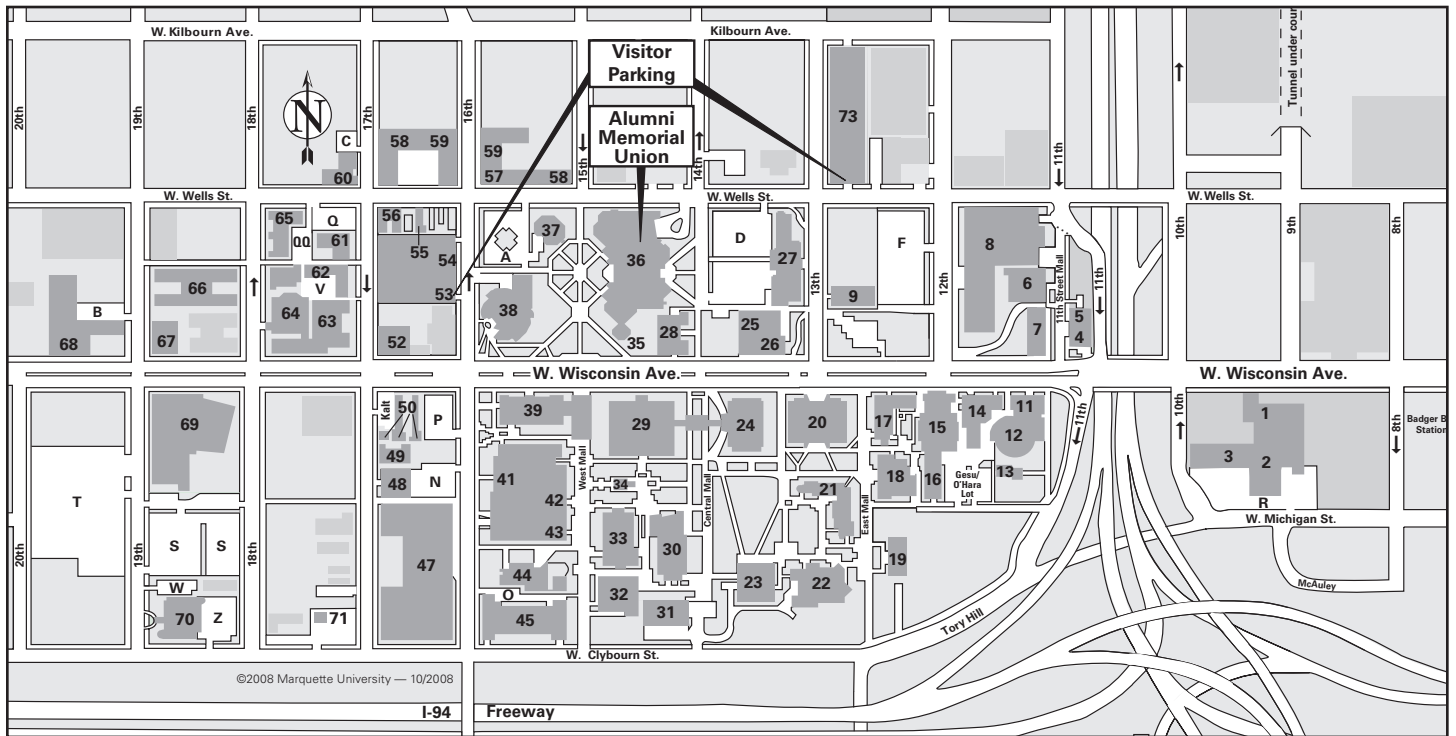
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MARQUETTE UNIVERSITY CAMPUS MAP



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